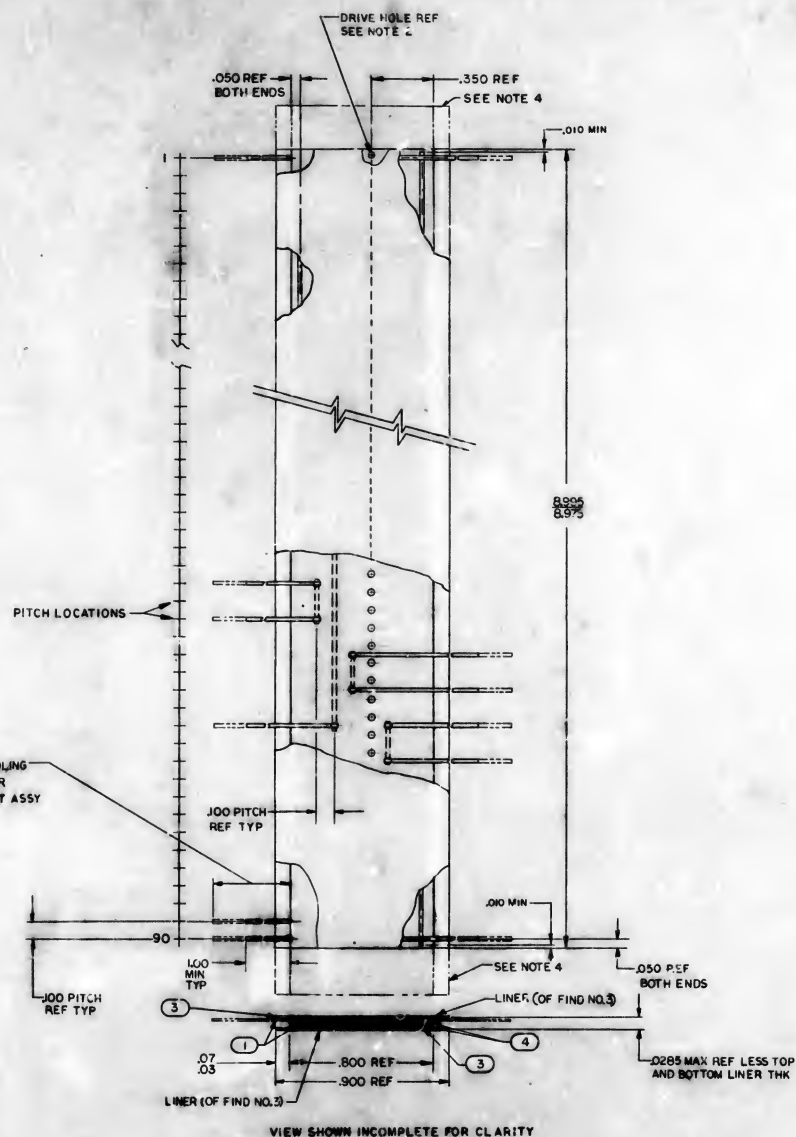


[illegible]

ALLOW EXCESS LENGTH FOR STORAGE & HANDLING—
LEADS MAY BE HELD TOGETHER BY TAPE OR
OTHER METHODS TO BE REMOVED AT NEXT ASSY



REPLACES REV B WITH CHANGE

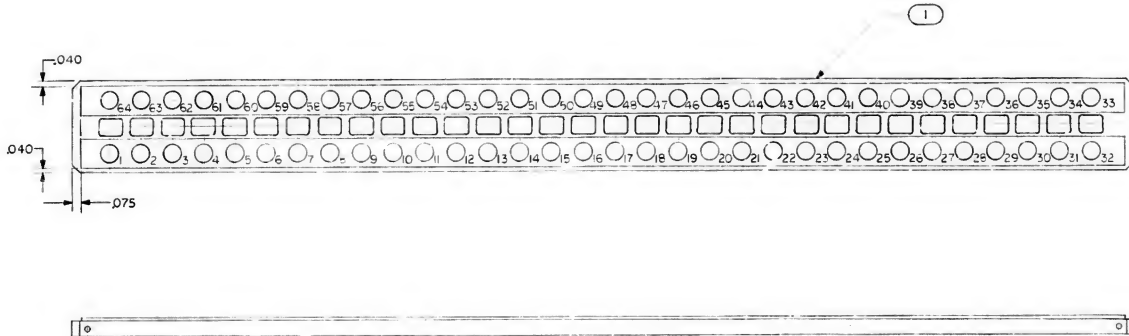
REVIEWS				
ITEM	DESCRIPTION	DATE	APPROVED	
C	REPLACES REVWPTH CHANG5 PER TORR 02270	02065		
D	REVISED PER TORR 03173	1-2-65		
E	REVISED PER TORR 03038	2-2-65		
F	REVISED PER TORR 03611	01-1-65		
G	REVISED PER TORR 00025	0-6-65		
H	REVISED PER TORR 03885	0-1-65		
J	REVISED PER TORR 02735	1-2-65		
K	REVISED PER TORR 00078	1-2-65		
L	REVISED PER TORR 00250	1-2-65		
M	REVISED PER TORR 03853	1-2-65		

NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. FABRICATE PER NO 1002030
- 3.
4. INDICATED MATERIAL IS USED FOR HANDLING PURPOSES ONLY AND IS TO BE REMOVED AT NEXT ASSEMBLY.

[illegible]

NOTICE - WHEN TOLERANCES SPECIFICATIONS OR OTHER DATA ARE NOT SHOWN ON THIS DRAWING, THE MANUFACTURER SHALL FOLLOW THE UNITED STATES GOVERNMENT STANDARD SPECIFICATIONS FOR THE MANUFACTURE OF DRAWINGS, WHICH ARE AVAILABLE FROM THE NATIONAL BUREAU OF STANDARDS, 400 RALEIGH BUILDING, WASHINGTON, D.C. 20540. THE MANUFACTURER SHALL BE RESPONSIBLE FOR THE PROPER INTERPRETATION OF THIS DRAWING. THE MANUFACTURER SHALL BE RESPONSIBLE FOR THE PROPER INTERPRETATION OF THIS DRAWING. THE MANUFACTURER SHALL BE RESPONSIBLE FOR THE PROPER INTERPRETATION OF THIS DRAWING.



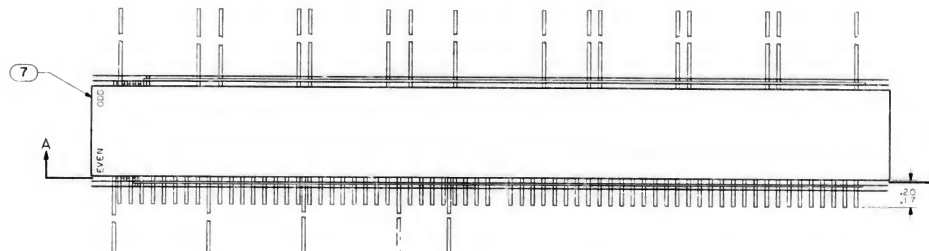
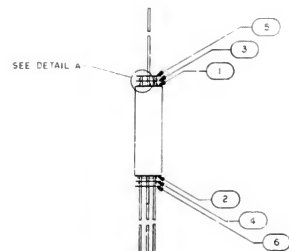
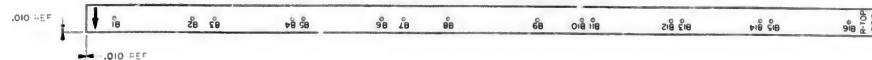
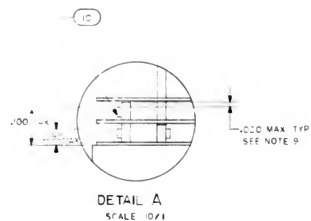
FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00896 DATE 4/17/67

- NOTES:
- 1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 - 2. BOND FIND NO. 2 AND FIND NO. 3 TO FIND NO. 1 PER ND1002004
 - 3. STAKE FIND NO. 4 TO FIND NO. 1 PER ND1002009

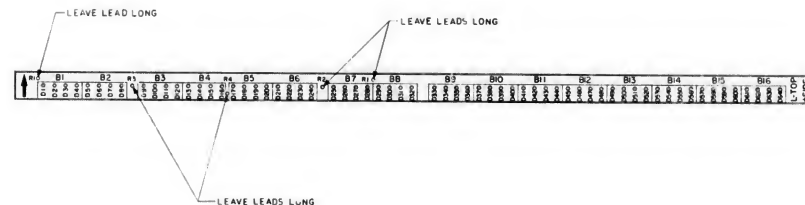
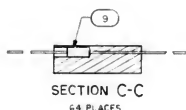
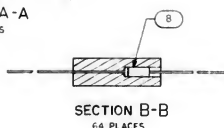
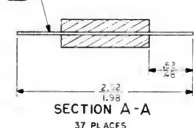
64	1006773	CORE	4
1	1004085-2	MYLAR FILM	3
1	1004085-1	MYLAR FILM	2
1	1004082	ROPE CHANNEL	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS			
MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
ROPE CHANNEL ASSEMBLY			
DRAWN <i>E. J. Dwyer</i> DATE 12-28-62		CODE IDENT NO. 1003065	
CHECKED <i>J. E. Dwyer</i> DATE 1-16-63		SIZE D	
APPROVAL <i>W. J. Dwyer</i> DATE 1-16-63		SCALE 2/1	
MIT APPROVAL <i>W. J. Dwyer</i> DATE 1-16-63		SHEET 1 OF 1	

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.
2. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
3. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
4. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
5. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
6. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
7. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
8. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
9. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
10. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.

REVISIONS
DATE APPROVAL



ALL WIRING NOT SHOWN FOR CLARITY



FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 20196 DATE 4/17/63

- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. ② DENOTES SILICON DIODE PER FIND NO. 8 IN VIEW H-H
 3. ③ DENOTES 1/4 W RESISTOR PER FIND NO. 9 IN VIEW L-L
 4. ④ DENOTES FEEDTHRU WIRE PER FIND NO. 11 IN VIEW A-A
 5. ASSEMBLE FIND NO. 1 AND FIND NO. 2 TO FIND NO. 7 AND WIRE PER DWS 1004080-1 AND 1004080-2
 6. WELD PER DW 1004080-3
 7. ASSEMBLE FIND NO. 3 AND FIND NO. 4 TO FIND NO. 7 AND WIRE PER DWS 1004080-3 AND 1004080-4
 8. ASSEMBLE FIND NO. 5 AND FIND NO. 6 TO FIND NO. 7
 9. ⑨ ON FIND NO. 1 THRU FIND NO. 4 DENOTES LEADS TO BE CUT .010/.020 BEYOND WELD
 10. ⑩ ON FIND NO. 1 DENOTES LEAD TO BE CUT .010/.020 BEYOND INSULATOR

ITEM	DESCRIPTION	QUANTITY
1006787-5	WIRE, ELECT	1
1006757-1	WIRE, ELECT	1
1006757-2	WIRE, ELECT	1
1006757-3	WIRE, ELECT	1
1006757-4	WIRE, ELECT	1
1006757-5	WIRE, ELECT	1
1006757-6	WIRE, ELECT	1
1006757-7	WIRE, ELECT	1
1006757-8	WIRE, ELECT	1
1006757-9	WIRE, ELECT	1
1006757-10	WIRE, ELECT	1
1006757-11	WIRE, ELECT	1
1006757-12	WIRE, ELECT	1
1006757-13	WIRE, ELECT	1
1006757-14	WIRE, ELECT	1
1006757-15	WIRE, ELECT	1
1006757-16	WIRE, ELECT	1
1006757-17	WIRE, ELECT	1
1006757-18	WIRE, ELECT	1
1006757-19	WIRE, ELECT	1
1006757-20	WIRE, ELECT	1
1006757-21	WIRE, ELECT	1
1006757-22	WIRE, ELECT	1
1006757-23	WIRE, ELECT	1
1006757-24	WIRE, ELECT	1
1006757-25	WIRE, ELECT	1
1006757-26	WIRE, ELECT	1
1006757-27	WIRE, ELECT	1
1006757-28	WIRE, ELECT	1
1006757-29	WIRE, ELECT	1
1006757-30	WIRE, ELECT	1
1006757-31	WIRE, ELECT	1
1006757-32	WIRE, ELECT	1
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1006757-68	WIRE, ELECT	1
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1006757-71	WIRE, ELECT	1
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1006757-81	WIRE, ELECT	1
1006757-82	WIRE, ELECT	1
1006757-83	WIRE, ELECT	1
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1006757-94	WIRE, ELECT	1
1006757-95	WIRE, ELECT	1
1006757-96	WIRE, ELECT	1
1006757-97	WIRE, ELECT	1
1006757-98	WIRE, ELECT	1
1006757-99	WIRE, ELECT	1
1006757-100	WIRE, ELECT	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL		MTE INSTRUMENTATION LAB DATE 10/1/62 CHECKED 10/1/62 APPROVAL 10/1/62		LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS DIODE BLOCK ASSEMBLY ROPE MEMORY STICK	
1003060	HEAT TREATMENT	NASA APPROVAL	DATE IDENT NO	SIZE	NASA DRAWING NO
NEXT ASBY	USED ON	FINAL FINISH	SCALE 2/1	WT	1003067
APPLICATION		WT APPROVAL		SHEET 1 OF 1	

1.600 REF

7.735 REF

X2P1 X2P2 X2P3 X2P4 X2P5 X2P6 X2P7 X2P8 X2P9 X2P10 X2P11 X2P12

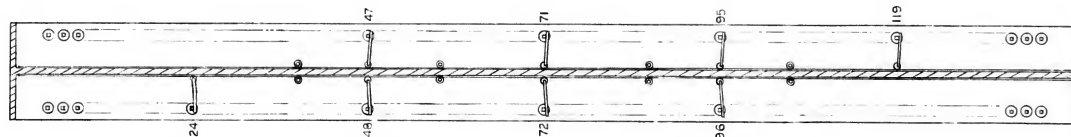


		UNLESS OTHERWISE SPECIFIED	
		DIMENSIONS ARE IN INCHES	
		TOLERANCES ON	
		FRACTIONS	DECIMALS ANGLE
		\pm 1/16	\pm 0.01 \pm 1/2
		DO NOT SCALE THIS DRAWING	
		MATERIAL 1018	
1003068		HEAT TREATMENT H	
NEXT ASSY	USED ON	FINAL FINISH H	
APPLICATION			

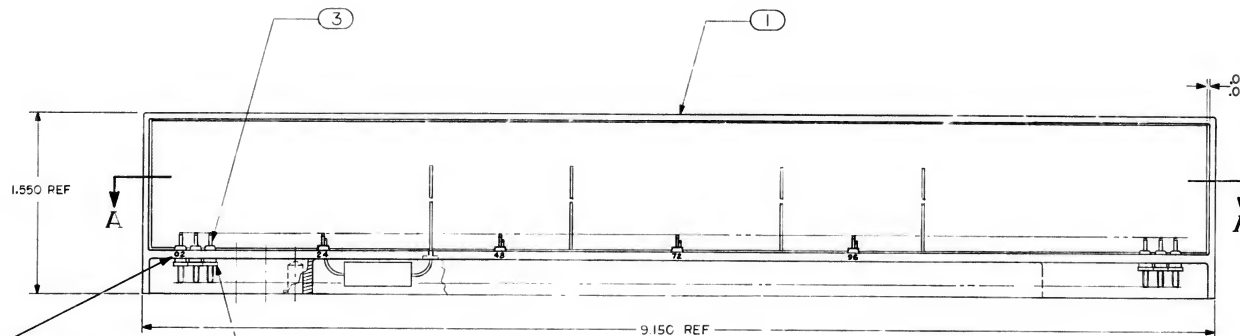
64	1006830-2	FEED THRU	2
1	100490	FEED THRU TERMINAL PLATE	2
97Y REQD	PART OF IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIN NO.
LIST OF MATERIALS			
M.I.T. INSTRUMENTATION LAB Cambridge, Mass CON. 25		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DESIGNED BY <i>[Signature]</i>	DATE <i>12-27-68</i>	FEED THRU PLATE ASSEMBLY	
CHECKED <i>[Signature]</i>	<i>1-9-69</i>		
APPROVAL <i>[Signature]</i>	<i>James E. Holt</i>		
APPROVAL <i>[Signature]</i>	<i>2-14-69</i>		
NASA APPROVAL <i>[Signature]</i>	<i>1-30-69</i>	CODE IDENT NO.	NASA DRAWING NO.
MIT APPROVAL <i>[Signature]</i>		SIZE SCALE <i>2/1</i>	<i>1003071</i>
		WT	SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT CONTRACTS, SPECIFICATIONS, OR DRAWINGS ARE USED FOR THE DESIGN, CONSTRUCTION, OR OPERATION OF ANY SPACECRAFT, THE USER SHALL BE RESPONSIBLE FOR THE PROPER INTERPRETATION OF THE DRAWING. THE USER SHALL BE RESPONSIBLE FOR THE PROPER INTERPRETATION OF THE DRAWING. THE USER SHALL BE RESPONSIBLE FOR THE PROPER INTERPRETATION OF THE DRAWING.

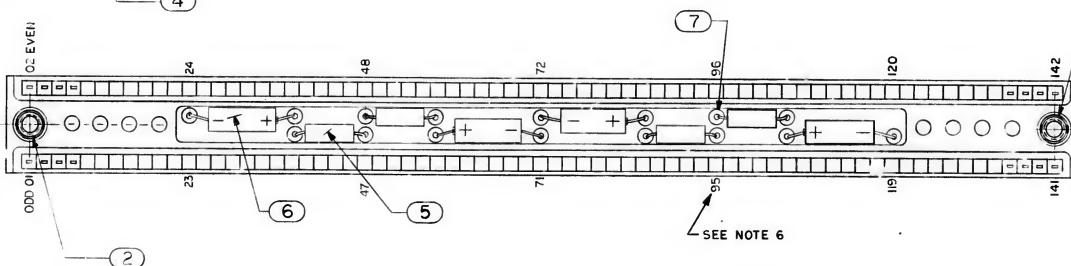
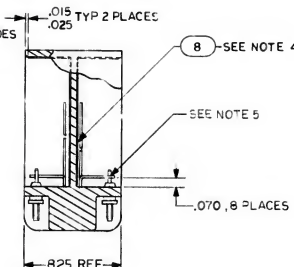
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 00635	1/24/82	AK
B	REVISED AND UPGRADED TO CLASS A PER TDRR 00906	1/15/82	AK



SECTION A-A



SEE NOTE 6
MARK FAR SIDE WITH
APPROPRIATE PIN NUMBERS
SEE BOTTOM VIEW



LOCATE 2 KEES AS
SHOWN WITHIN $\pm 25^\circ$
2 PLACES
SEE NOTE 2

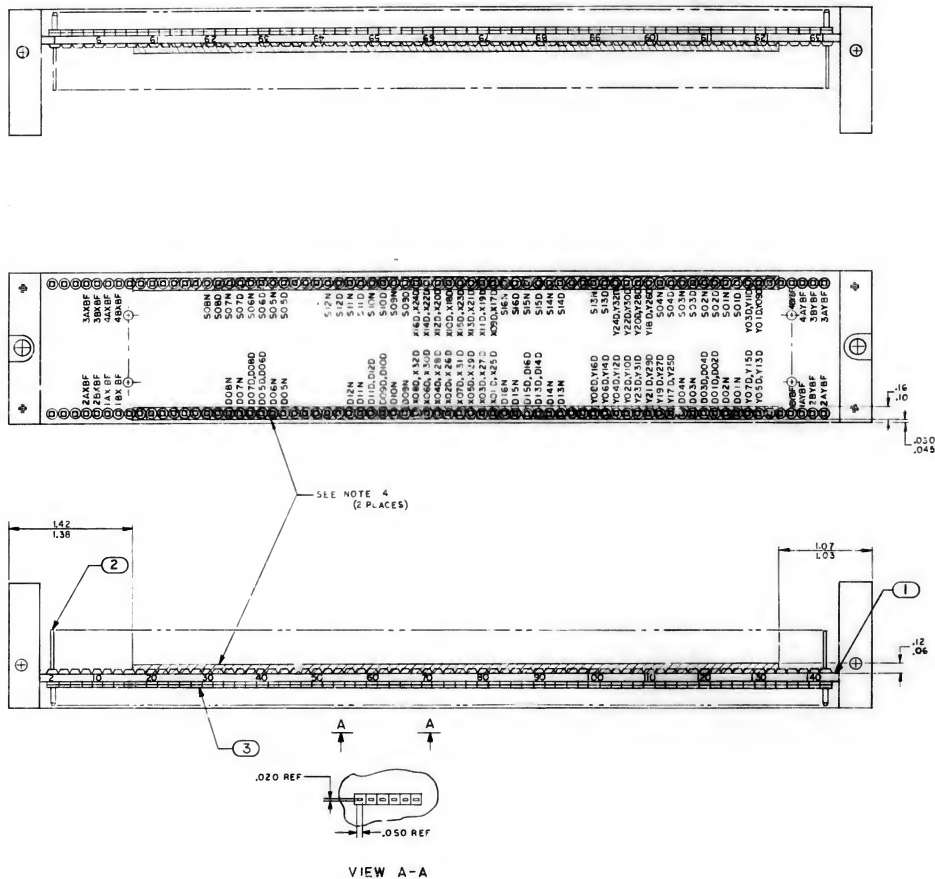
- NOTES:-
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. COAT THREADS AND FIND NO.2 PER MIL-P-8585 WET ZINC CHROMATE PRIMER
 3. INSTALL FIND NO. 2 PER ND1002121
 4. BOND FIND NO. 8 TO FIND NO.1 PER ND1002004
 5. WELD PER ND1002005
 6. MARK .040 TO .080 HIGH WHITE CHARACTERS PER ND1002019

2	1004081-4	INSULATOR, MYLAR	8
16	1005805	INSULATOR, BUSHING	7
4	1006755 -79	CAPACITOR	6
4	1010406-14	CHOKE, RF	5
142	1006775	INSULATOR WRAPOST MALE MIN	4
142	1006782-1	CONTACT WRAPOST MALE MINIATURE	3
2	NAS 1394C-08L	KEENSERT KN	2
1	1004094	HEADER HOUSING	1
QTY	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
REQD			

1003074		NEXT ASSY		USED DN		APPLICATION	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES DN		FRACTIONS		DECIMALS		ANGLES	
DO NOT SCALE THIS DRAWING		MATERIAL		HEAT TREATMENT		FINAL FINISH	
NASA APPROVAL		NASA APPROVAL		NASA APPROVAL		NASA APPROVAL	
MIT API		MIT API		MIT API		MIT API	
SCALE: 2/1		SCALE: 2/1		SCALE: 2/1		SCALE: 2/1	
WT		WT		WT		WT	
SHEET		SHEET		SHEET		SHEET	
OF 1		OF 1		OF 1		OF 1	

HEADER HOUSING SUB ASSY
MICRO LOGIC STICK

CODE IDENT NO. D
SIZE 1003075



(E) REPLACES REV D WITH CHANGES

- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. *STALL F.ND NO.2 AND FIND NO.3 IN FIND NO.1 PER ND 100236
 3. MARK WHITE CHARACTERS AS SHOWN PER ND1002019 (REF SILK SCREEN MASTER DWG 1004089)
 4. BONDING MATERIAL TO BE APPLIED TO INDICATED AREAS PER ND 1002008 USING TYPE II SEMI-RIGID MATERIAL. TAPINGS TO BE FREE FROM BONDING MATERIAL BEYOND INDICATED DIMENSIONS

142	1006775	(INSULATOR WRAPOST MALE (MIN)	3
42	1006782-2	CONTACT WRAPOST MALE (MIN)	2
1	1003101	HEADER	1
QTY REQD	PART IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FINC NO

LIST OF MATERIALS	
MANNED SPACECRAFT CENTER QUOTER TEAM	
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES = ± = ± = ±</p> <p>DO NOT SCALE THIS DRAWING MATERIAL</p>	
1003068	1003069
NEAT ASST	USED ON
APPLICATION: _____	

<p>INT INSTRUMENTATION LAB COMMENCE PAGE</p> <p>DATE: 10/10/68 CHECKED: [Signature] APPROVAL: [Signature]</p> <p>NASA APPROVAL: [Signature]</p> <p>SET APPROVAL: [Signature]</p>			
CODE WORD #	SIZ	NASA DRAWING NO	
E	E	1003077	
SCALE 2/1	WT	SHEET 1 OF 1	



SEE NOTE 6



FOR INFORMATION ONLY

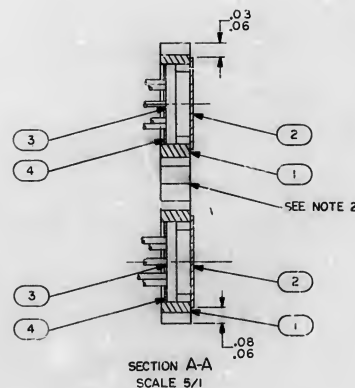
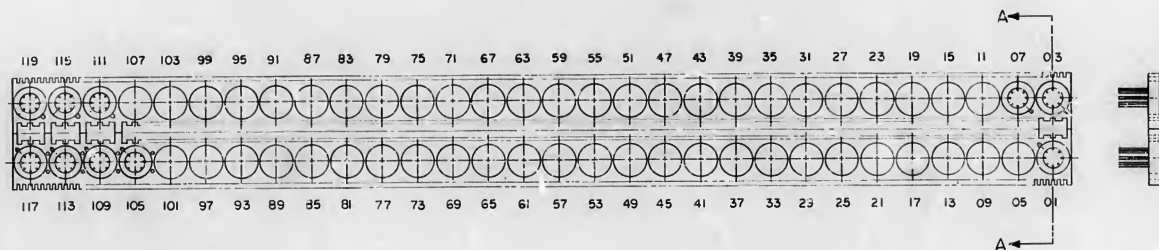
CLASS & RELEASE TO: 100%

NOTES:
1. DIMENSIONS SHOWN IN PARENTHESES ARE RECOMMENDED.
2. DIMENSIONS SHOWN IN PARENTHESES ARE RECOMMENDED.
3. DIMENSIONS SHOWN IN PARENTHESES ARE RECOMMENDED.
4. DIMENSIONS SHOWN IN PARENTHESES ARE RECOMMENDED.
5. DIMENSIONS SHOWN IN PARENTHESES ARE RECOMMENDED.

DATE: 10/10/78 TIME: 10:00 AM BY: J. J. J. FOR: J. J. J.		DATE: 10/10/78 TIME: 10:00 AM BY: J. J. J. FOR: J. J. J.	
DATE: 10/10/78 TIME: 10:00 AM BY: J. J. J. FOR: J. J. J.		DATE: 10/10/78 TIME: 10:00 AM BY: J. J. J. FOR: J. J. J.	
DATE: 10/10/78 TIME: 10:00 AM BY: J. J. J. FOR: J. J. J.		DATE: 10/10/78 TIME: 10:00 AM BY: J. J. J. FOR: J. J. J.	
DATE: 10/10/78 TIME: 10:00 AM BY: J. J. J. FOR: J. J. J.		DATE: 10/10/78 TIME: 10:00 AM BY: J. J. J. FOR: J. J. J.	

NOTICE - WHERE GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE REQUIRED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY STATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT DOES NOT INCUR ANY RESPONSIBILITY AND ANY IMPLICATION WHATSOEVER, NOR THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR USED SUCH DATA FOR ANY SPECIFIC PURPOSE SHALL BE CONSIDERED AN IMPLI- CATION TO BE DECIDED BY IMPLICATION OR OTHERWISE AS IN ANY MATTER INVOLVING THE RIGHTS OF ANY OTHER PERSON OR PERSONS. NO OR CONVEY- ING ANY RIGHTS OR PERMISSION TO MANUFACTURE, OR TO SELL ANY

REVISIONS				
SYM	DESCRIPTION	TORR	DATE	APPROVAL
A	REVISED & UPGRADED TO CLASS A PER TORR 00902	1643	10/25/02	NET WK
B	REVISED PER TORR 1631	1631	11/29/02	OK WK
C	REVISED PER TORR 01822	01822	7/24/03	OK WK
D	REVISED PER TORR 00284	00284	7/24/03	OK WK
E	REVISED PER TORR 03046	03046	11/27/02	OK WK
F	REVISED PER TORR 12551	12551	11/27/02	OK WK



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
 2. BOND HOUSINGS PER MD 1002004 ORIENTING AS SHOWN
 3. AR DENOTES AS REQUIRED QUANTITY
 4. ☒ IN TABLE SIGNIFIES FIND NO.3 TO BE OMITTED IN THIS POSITION

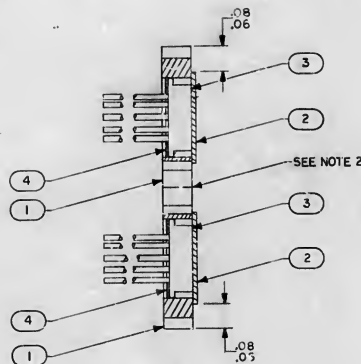
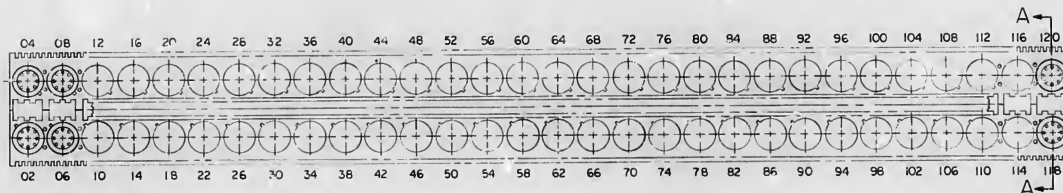
AR	1004098	WASHER, MYLAR	4
AR	1006771	MICRO NOR GATE (TO-47)	3
AR	1006826-3	INSULATION, TAPE ELECTRICAL	2
2	1004095	HOUSING MICRO LOGIC TO-47	1
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIRM NO.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		M I T INSTRUMENTATION LAB CHAMBER, TEXAS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		TOLERANCES ON FRACTIONS DECIMALS ANGLES		DWG. NO. CONTRACT DRAWN <i>W. J. G.</i> DATE <i>2/2/63</i> CHECKED <i>W. J. G.</i> DATE <i>2/2/63</i> APPROVAL <i>W. J. G.</i> DATE <i>2/2/63</i> APPROVAL <i>W. J. G.</i> DATE <i>2/2/63</i>		TO-47 HOUSING SUB-ASSEMBLY (ODD) (TABULATED)	
		DO NOT SCALE THIS DRAWING MATERIAL		NASA APPROVAL <i>[Signature]</i> NASA APPROVAL <i>[Signature]</i>		COS# IDENT NO. SIZE [] []	
1000001		HEAT TREATMENT		INT APPROVAL <i>[Signature]</i> INT APPROVAL <i>[Signature]</i>		NASA DRAWING NO. 1003079	
NEXT ASSY USED ON		FINAL FINISH		SCALE 2:1 DT		SHEET 1 OF 2	
*PLICATION							

<div> <div>1003001</div> <div> NEXT ASSY USED ON </div> <div>APPLICATION</div> </div>		<div> <div>UNLESS OTHERWISE SPECIFIED</div> <div> DIMENSIONS ARE IN INCHES </div> <div> TOLERANCES ON </div> <div> FRACTIONS DECIMALS ANGLES </div> <div> ± .001 ± .005 ± .010 </div> <div> DO NOT SCALE THIS DRAWING </div> <div> MATERIAL </div> </div>		<div> <div>MIS</div> <div>INSTRUMENTATION LAB</div> <div> CANNONVILLE, KANSAS </div> <div> DES. NO. DATE </div> <div> CHECKED BY DATE </div> <div> APPROVAL DATE </div> <div> NASA APPROVAL </div> <div> ENT APPROVAL </div> </div>		<div> <div>MAIN'D SPACECRAFT CENTER</div> <div>HOUSTON, TEXAS</div> <div> TO 47 HOUSING </div> <div> SUB - ASSEMBLY </div> <div> (ODD) (TABULATED) </div> <div> CODE IDENT NO. SIZE </div> <div> SCALE WT </div> </div>	
		<div> <div>HEAT TREATMENT</div> <div>FINISH FINISH</div> </div>		<div> <div> D </div> <div> 1003079 </div> <div> SHEET 2 OF 2 </div> </div>			

NOTES - THIS DRAWING IS A REVISION OF DRAWING NO. 1003082, WHICH WAS REVISED BY THE INSTRUMENTATION LAB. THE REVISIONS ARE INDICATED BY THE LETTERS A THROUGH G. THE REVISIONS ARE AS FOLLOWS: A. REVISED PER TDRR 00903. B. REVISED PER TDRR 00903. C. REVISED PER TDRR 00903. D. REVISED PER TDRR 00903. E. REVISED PER TDRR 00903. F. REVISED PER TDRR 00903. G. REVISED PER TDRR 00903.

REV	DESCRIPTION	DATE	APPROVAL
A	REVISED / UPGRADE TO CLAS A PER TDRR 00903	10/1/63	W. E. WILK
B	REVISED PER TDRR 00903	11/1/63	W. E. WILK
C	REVISED PER TDRR 00903	11/1/63	W. E. WILK
D	REVISED PER TDRR 00903	11/1/63	W. E. WILK
E	REVISED PER TDRR 00903	11/1/63	W. E. WILK
F	REVISED PER TDRR 00903	11/1/63	W. E. WILK
G	REVISED PER TDRR 00903	11/1/63	W. E. WILK



SECTION A-A
SCALE 5:1

NOTES

1. INTERPRET DWG IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. BOND HOUSINGS PER ND1002004 ORIENTING AS SHOWN
3. AR DENOTES AS REQUIRED QUANTITY
4. IN TABLE SIGNIFIES FIND NO. 3 TO BE OMITTED IN THIS POSITION

QTY	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
AR	1004098	WASHER, MYLAR	4
2	1006771	MICRO, NOR GATE (TO 47)	3
2	1006826-3	INSULATION TAPE, ELECTRICAL	2
2	1004095	HOUSING, MICRO LOGIC (TO 47)	1

LIST OF MATERIALS

INSTRUMENTATION LAB CHARLOTTE, N.C.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>[Signature]</i> DATE <i>10/1/63</i> CHECKED <i>[Signature]</i> DATE <i>10/1/63</i> APPROVAL <i>[Signature]</i> DATE <i>10/1/63</i>		TO-47 HOUSING SUB-ASSEMBLY (EVEN) (TABULATED)	
1003082 NEXT ASSY USED ON APPLICATION		NASA APPROVAL <i>[Signature]</i> CODE IDENT NO. D SIZE 1003080 MIT APPROVAL <i>[Signature]</i> SCALE 2:1 WT 0.5 SHEET 1 OF 2	

NOTICE - WHEN MODIFICATIONS OR REVISIONS TO THIS DRAWING ARE REQUIRED, THE DRAWING MUST BE REVISED BY THE PERSONNEL RESPONSIBLE FOR THE DESIGN OF THE PART. THE REVISIONS MUST BE INDICATED BY A REVISION SYMBOL AND A REVISION DESCRIPTION. THE REVISIONS MUST BE INDICATED BY A REVISION SYMBOL AND A REVISION DESCRIPTION. THE REVISIONS MUST BE INDICATED BY A REVISION SYMBOL AND A REVISION DESCRIPTION.

MODULE NO.		A1-A16		A17		A18		A21		A22		A23		A24		A25		A26		A27		A28		A29		A30-A31		A32		A33-A34		A35		A36		A37		A38		A39		A40		A41		A42		A43		A44		A45		A46		A47		A48		A49		A50		A51		A52		A53		A54		A55		A56		A57		A58		A59		A60		A61		A62		A63		A64		A65		A66		A67		A68		A69		A70		A71		A72		A73		A74		A75		A76		A77		A78		A79		A80		A81		A82		A83		A84		A85		A86		A87		A88		A89		A90		A91		A92		A93		A94		A95		A96		A97		A98		A99		A100		A101		A102		A103		A104		A105		A106		A107		A108		A109		A110		A111		A112		A113		A114		A115		A116		A117		A118		A119		A120																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
PART NO.		1003/90		-1		-2		-3		-4		-5		-6		-7		-8		-9		-10		-11		-12		-13		-14		-15		-16		-17		-18		-19		-20		-21		-22		-23		-24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
REVISION		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—		—			

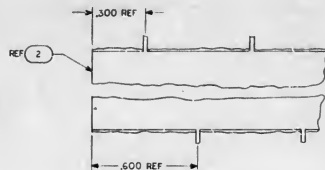
POSITION NO. (SEE NOTE 4)

TOTAL TO 47 THIS ASSY	56	60	50	54	47	49	52	57	58	57	60	58	58	58	58	56	60	56	58	53	45	57	60
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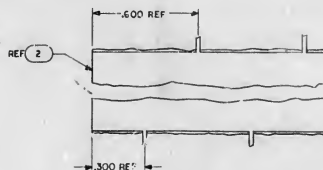
REV	SYM	DESCRIPTION	DATE	APPROVAL
A		REVISED / UPGRADED TO CLASS A PER TDOR 00093	11/1/83	WLT
B		REVISED PER TDOR 0181	11/1/83	WLT
C		REVISED PER TDOR 0181	11/1/83	WLT
D		REVISED PER TDOR 0181	11/1/83	WLT
E		REVISED PER TDOR 0304P	11/1/83	WLT
F		REVISED PER TDOR 0304P	11/1/83	WLT
G		REVISED PER TDOR 0304P	11/1/83	WLT

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB Cambridge, Mass		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN: <i>[Signature]</i> DATE: 11/29/83		TO-47 HOUSING SUB-ASSEMBLY (EVEN) (ASSEMBLED)	
CHECKED: <i>[Signature]</i> DATE: 11/1/83		CODE IDENT NO. D NASA DRAWING NO. 1003080	
APPROVAL: <i>[Signature]</i>		SCALE: <i>[Signature]</i>	
MIT APPROVAL: <i>[Signature]</i>		SHEET 2 OF 2	

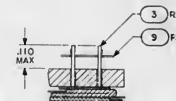
THIS DRAWING IS THE PROPERTY OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.



SECTION A-A

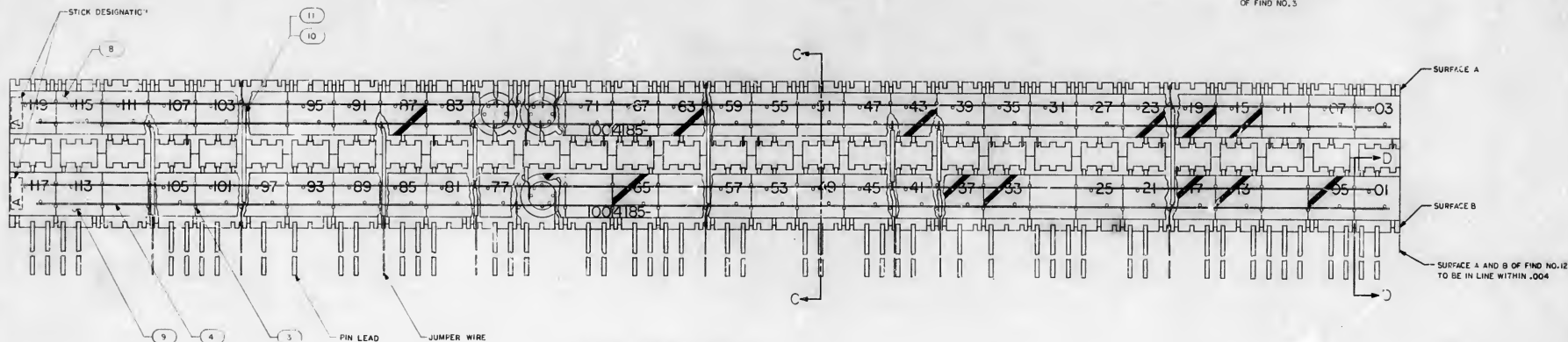


SECTION B-B

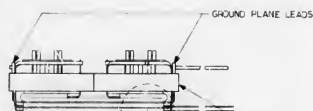
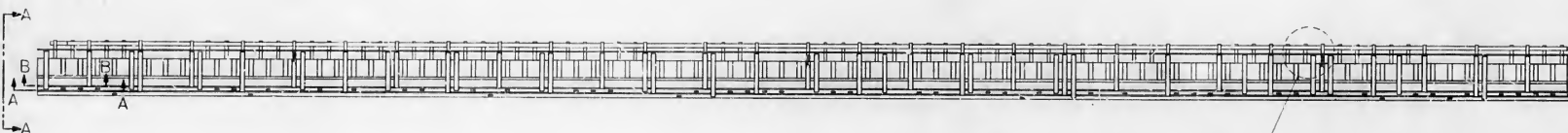


SECTION D-D

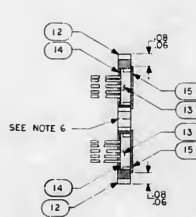
TYP FOR ALL LOCATIONS OF FIND NO. 3



VIEWS SHOWN ARE OF NO SPECIFIC MODULE. JUMPER WIRES ARE TYPICAL OF MODULES AT THRU AIR.



VIEW A-A



SECTION C-C

FIND NOS 2 THRU 11 REMOVED FOR CLARITY SCALE: NONE



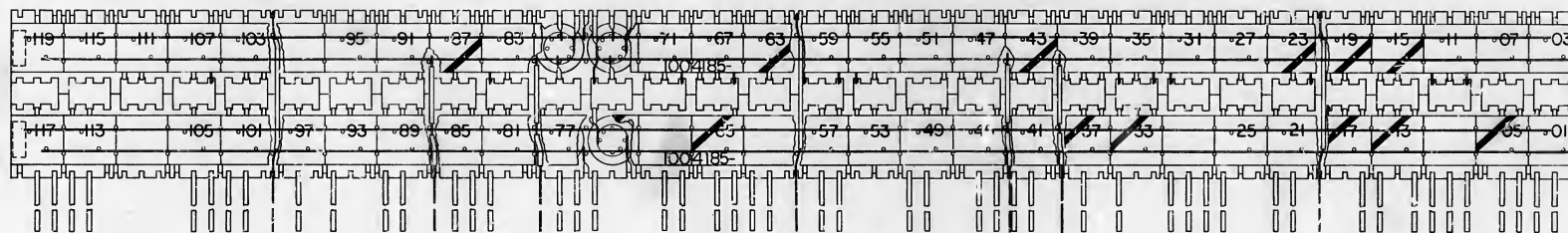
① REPLACES REV H WITH CHANGES

- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. WELD PER 10002002
 3. AR DENOTES AS REQUIRED
 4. CUT 3V BUSS BETWEEN GATES 87 AND 83
 5. DIM IN TABLE 1 SIGNIFIES FIND NO. 13 AND FIND NO. 14 TO BE OMITTED IN THIS POSITION
 6. BOND HOUSINGS, FIND NO. 12 TOGETHER PER 10002004, ORIENTING AS SHOWN

QTY	PART OR IDENTIFYING NO.	QUANTITY OR IDENTIFYING NO.	FIND NO.
1	1006226-3	INSULATION TAPE, ELECTRICAL	15
1	1004827	INSULATOR	14
2	1006771	MICRO-NOR GATE (10-47)	13
2	1004658	HOUSING, MICROLOGIC (10-47)	12
1	1006757-8	WIRE, ELECTRICAL .030 DIA	11
1	1006776-21	INSULATION, SLEEVING	10
1	SEE CHART 1	INSULATOR, STICK	9
1	SEE CHART 1	800 MATRIX ASSEMBLY (7)	8
1	SEE CHART 1	800 MATRIX ASSEMBLY (5)	7
1	SEE CHART 1	1400 MATRIX ASSEMBLY (5)	6
1	1006757-7	WIRE, ELECTRICAL NICKEL .005 X .030	5
1	1015402	WIRE, ELECTRICAL KVARAR	4
1	1004100	GROUND PLANE	3
1	SEE CHART 1	TO-WATT HOUSING - 800 ASSEMBLY (1000)	2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES		INSTRUMENTATION LAB HOUSTON, TEXAS	
1003174	1003074	DATE: 10/1/66	SCALE: 1/1
NEXT ASST	USED ON	FINAL FINISH	APPLICATION
HEAT TREATMENT		NADA APPROVAL: 10/1/66	
BY APPROVAL: 10/1/66		CODE: 10/1/66	
E		1003081	
SCALE: 1/1		SHEET 1 OF 3	

REV	DESCRIPTION	DATE	BY
J	REPLACES REV H WITH CHANGES PER TORR 04196	11/24/64	W
K	REVISED PER TORR 06024	11/24/64	W
L	REVISED PER TORR 06315	11/24/64	W
M	REVISED PER TORR 06147	11/24/64	W
N	REVISED PER TORR 06262	11/24/64	W
O	REVISED PER TORR 06262	11/24/64	W
P	REVISED PER TORR 06262	11/24/64	W
Q	REVISED PER TORR 06262	11/24/64	W
R	REVISED PER TORR 06262	11/24/64	W



VIEWS SHOWN ARE OF NO SPECIFIC MODULE.
JUMPER WIRES ARE TYPICAL OF MODULES
A15, A18, A21 THRU A38

JUMPER WIRE



ⓐ REPLACES REV H WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NAME/CLATURE OR DESCRIPTION	FIG NO.
MILITARY INSTRUMENTATION LAB DAVIDSON, N.C.		WANNED SPACECRAFT CENTER HOUSTON, TEXAS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS AND ES DO NOT SCALE THIS DRAWING GATEWAY		MICRO LOGIC MODULE SUB ASSEMBLY (ODD) (TABULATED)	
DATE 11/24/64	BY W	COOK DESIG NO. E	1003081
APP'D 11/24/64	BY W	SCALE 4/1	1
TEST APP'D 11/24/64	BY W	TEST NO.	1

TABLE I
TABLE INDICATES LOADING OF HOUSING MODULES
(FIND NO. 12) WITH MICRO LOGIC GATES (FIND NO. 13)
SEE NOTE 5

MODULE NO.	A1-A16	A17	A18	A21	A22	A23	A24	A25	A26	A27	A28	A29	A30-A31	A32	A33-A34	A35	A36	A37	A38	A39	A40
01																					
03																					
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CHART I

MODULE NO.	INSULATOR FIND NO. 8	INSULATOR FIND NO. 9	MATRIX 3 FIND NO. 5	MATRIX 5 FIND NO. 6	MATRIX 7 FIND NO. 7	PART NO.	REV	QUANTITY OF FIND NO. 2	QUANTITY OF FIND NO. 13	QUANTITY OF FIND NO. 14
A1-A16	1004170-3	1004170-1	1003063-2	1003064-3		1003081-1	R	1	60	60
A17	1004173-3	1004173-1	1003063-8	1003064-8		1003081-2	R	1	58	58
A18	1004178-3	1004178-1	1003063-9	1003064-11		1003081-3	R	1	58	58
A19	1004183-3	1004183-1	1003063-34	1003064-23		1003081-4	R	1	58	58
A20	1004183-3	1004183-1	1003063-28	1003064-56		1003081-5	R	2	59	59
A21	1004175-3	1004175-1	1003063-12	1003064-59		1003081-6	R	1	41	41
A22	1004185-3	1004185-1	1003063-32	1003064-63		1003081-7	R	2	56	56
A23	1004184-3	1004184-1	1003063-30	1003064-23		1003081-8	R	1	59	59
A24	1004175-3	1004175-1	1003063-20	1003064-59		1003081-9	R	1	58	58
A25	1004186-3	1004186-1	1003063-36	1003064-68		1003081-10	R	1	60	60
A26	1004188-3	1004188-1	1003063-25	1003064-61		1003081-11	R	1	58	58
A27	1004189-3	1004189-1	1003063-38	1003064-75		1003081-12	R	1	58	58
A28	1004176-3	1004176-1	1003063-14	1003064-27		1003081-13	R	1	52	52
A29	1004177-3	1004177-1	1003063-16	1003064-31		1003081-14	R	1	57	57
A30	1004171-3	1004171-1	1003063-4	1003064-7		1003081-15	R	1	59	59
A31	1004187-3	1004187-1	1003063-35	1003064-31		1003081-16	R	1	59	59
A32	1004180-3	1004180-1	1003063-88	1003064-43		1003081-17	R	1	59	59
A33	1004181-3	1004181-1	1003063-24	1003064-47		1003081-18	R	1	59	59
A34	1004180-3	1004180-1	1003063-22	1003064-76		1003081-19	R	1	59	59
A35	1004187-3	1004187-1	1003063-40	1003064-78		1003081-20	R	1	56	56
A36	1004172-3	1004172-1	1003063-42	1003064-89		1003081-21	R	1	55	55
A37	1004174-3	1004174-1	1003063-46	1003064-19		1003081-22	R	1	60	60
A38	1004173-3	1004173-1	1003063-8	1003064-52		1003081-23	R	1	55	55
A39	1004182-3	1004182-1	1003063-48	1003064-34		1003081-24	R	1	53	53
A40	1004186-3	1004186-1	1003063-49	1003064-85		1003081-25	R	2	57	57
A41	1004189-3	1004189-1	1003063-38	1003064-75		1003081-26	R	1	54	54

① REPLACES REV H WITH CHANGES.

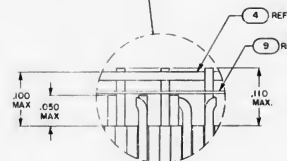
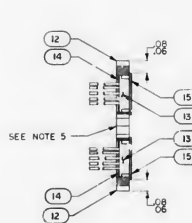
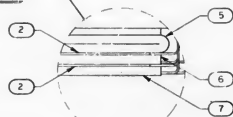
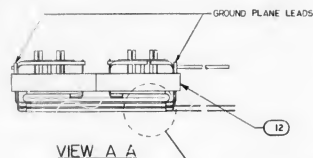
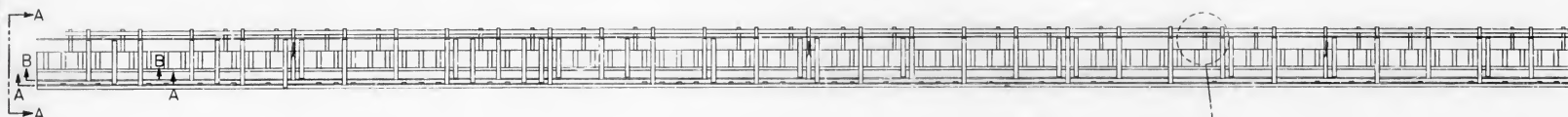
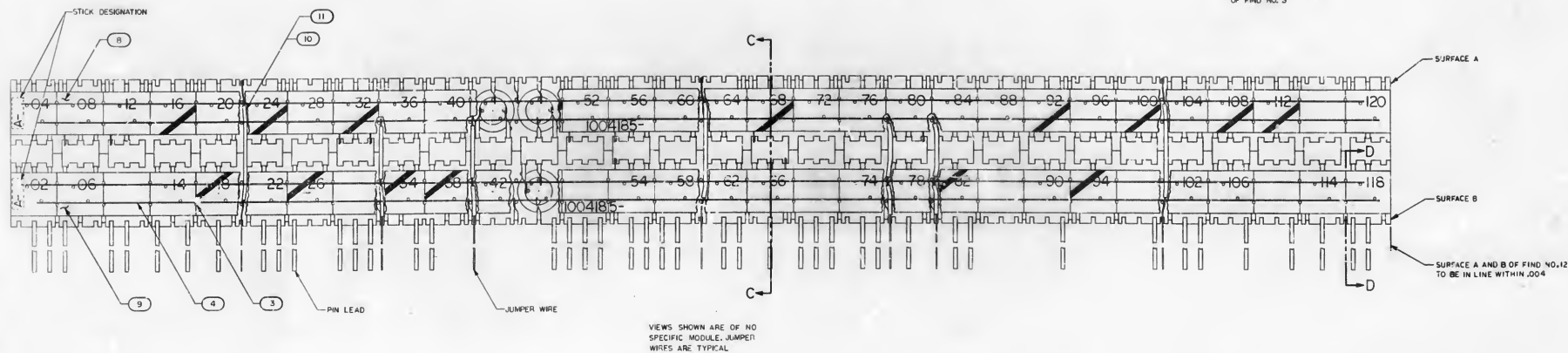
QTY REQD	PLT OR PARTS REQD	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER			
SUB ASSEMBLY (ODD)			
(TABULATED)			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL		DRAWN BY DATE CHECKED BY DATE APPROVED BY DATE	
NEXT TREATMENT		CODE IDENT NO	
USED ON		SIZE	
APPLICATION		MATERIAL NO	
		1003081	
		SCALE 3/1	
		SHEET 3 OF 3	

SECTION A-A

SECTION B-B

SECTION D-D
TYP FOR ALL LOCATIONS
OF FIND NO. 3

REVISED			
BY	DESCRIPTION	C	APPROVAL
J	REPLACES REV H WITH CHANGES PER TORR 0758	2/26/86	OK
K	REVISED PER TORR 6024	2/26/86	OK
L	REVISED PER TORR 60750	2/26/86	OK
M	REVISED PER TORR 07862 DR 80 CHK OUT	2/26/86	OK
N	REVISED PER TORR 12837 DR 80 CHK OUT RTM	2/26/86	OK
P	REVISED PER TORR 12830 DR 80 CHK OUT RTM	2/26/86	OK



SECTION C-C
FIND NO. 2 THRU 11
REMOVED FOR CLARITY
SCALE: NONE

① REPLACES REV H WITH CHANGES

- NOTES:
1. INTERPRET DWG. IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. W. LD. PER NDI002005
 3. AR DENOTES AS REQUIRED
 4. ~~DO~~ IN TABLE 1 SIGNIFIES FIND NO.13 AND FIND NO.14 TO BE OMITTED IN THIS POSITION
 5. BOND HOUSING, FIND NO.12, TOGETHER PER NDI002004 ORIENTING AS SHOWN
 6. IDENTIFY PER NDI002019

AR	I00626-3	INSULATION TAPE, ELECTRICAL	15	
5	504	INSULATOR	15	
5	I00671-7	MICRO-NONR GATE (TO-47)	15	
2	2	HOLDING MICROSCOPE	15	
5	I006757-8	WIRE, ELECTRICAL, O2P DIA	11	
5	I006776-21	INSULATION, SLEEVEING	11	
1	1	INSULATOR, STICK	11	
1	1	INSULATION, STICK	11	
1	1	800 MATRIX ASSEMBLY (6)	7	
1	1	CHARACTER ASSEMBLY (4)	7	
1	1	800 MATRIX ASSEMBLY (2)	7	
5	I006757-7	WIRE ELECTRICAL, NUT#1 0.5X5.0	3	
AR	I01542-0	WIRE ELECTRICAL, NONAR	3	
5	I00410-0	OF ZINC PLANE	3	
		TO 47 HOLDING SUBASSEMBLY	3	
CITY		IDENTIFY NO	IDENTIFICATION OR DECLARATION	REVIEW
		Q	Q	Q

UNIT OR OTHERWISE SPECIFIED (DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES)		MATERIAL INSTRUMENTATION LAB CHECKED <i>[Signature]</i> DATED <i>10/1/82</i> BY <i>[Signature]</i> FOR <i>[Signature]</i> APPROVED <i>[Signature]</i>		MANUFACTURING CENTER INDUSTRIAL PLANTS	
DO NOT SCALE THIS DRAWING (REFER TO MATERIAL)		PAGA A "WORK" DRAWING		MICRO - LOGIC MODULE SUB ASSEMBLY (TABULATED) (EVEN)	
LAST TREATMENT		CAGE CODE NO.		TASK DRAWING NO.	
NEXT ASST. USED ON		E		1003082	
APPLICATION		MKT. APPROV. <i>[Signature]</i>		SHEET 1 OF 2	

TABLE INDICATES LOADING OF HOUSING MODULES
(FIND NO.12) WITH MICRO NOR GATES (FIND NO.13)
SEE NOTE 4

[illegible]

CHART I

MODULE NO.	INSULATOR FIND NO.8	INSULATOR FIND NO.9	MATRIX 2 FIND NO.5	MATRIX 4 FIND NO.6	MATRIX 6 FIND NO.7	PART NO.	REV	QUANTITY OF FIND NO. 8	QUANTITY OF FIND NO. 13	QUANTITY OF FIND NO.14
A1-A16	IC04170-4	IC04170-2	IC03063-1	IC03056-1		IC03082-1	P	1	56	56
A17	IC04173-4	IC04173-2	IC03063-7	IC03064-13		IC03082-2	P	1	60	60
A18	IC04186-4	IC04186-2	IC03063-3	IC03064-5	IC03064-66	IC03082-4	P	2	54	54
A19	IC04183-4	IC04183-2	IC03063-17	IC03064-33		IC03082-215	P	1	58	58
A20	IC04175-4	IC04175-2	IC03063-17	IC03064-33		IC03082-216	P	1	49	49
A24	IC04185-4	IC04185-2	IC03063-31	IC03064-61	IC03064-62	IC03082-7	P	2	52	52
A25	IC04184-4	IC04184-2	IC03063-29	IC03064-21		IC03082-8	P	1	57	57
A26	IC04178-4	IC04178-2	IC03063-19	IC03064-35		IC03082-10	P	1	56	56
A27	IC04174-4	IC04174-2	IC03063-5	IC03064-9		IC03082-16	P	1	56	56
A28	IC04182-4	IC04182-2	IC03063-25	IC03064-39		IC03082-17	P	1	57	57
A29	IC04188-4	IC04188-2	IC03063-25	IC03064-39		IC03082-18	P	1	57	57
A30-A31	IC04178-4	IC04178-2	IC03063-17	IC03064-33		IC03082-13	P	1	58	58
A32	IC04176-4	IC04176-2	IC03063-15	IC03064-25		IC03082-14	P	1	58	58
A33-A34	IC04172-4	IC04172-2	IC03063-7	IC03064-9		IC03082-15	P	1	58	58
A35	IC04171-4	IC04171-2	IC03063-3	IC03064-5		IC03082-16	P	1	58	58
A36	IC04185-4	IC04185-2	IC03063-29	IC03064-21		IC03082-18	P	1	58	58
A37	IC04190-4	IC04190-2	IC03063-25	IC03064-39		IC03082-19	P	1	58	58
A38	IC04181-4	IC04181-2	IC03063-1	IC03064-3		IC03082-20	P	1	58	58
A39	IC04179-4	IC04179-2	IC03064-39	IC03064-37		IC03082-21	P	1	58	58
A40	IC04187-4	IC04187-2	IC03063-17	IC03064-33		IC03082-22	P	1	58	58
A41	IC04172-4	IC04172-2	IC03063-41	IC03064-88		IC03082-22	P	1	50	50
A42	IC04183-4	IC04183-2	IC03063-43	IC03064-90		IC03082-23	P	1	45	45
A43	IC04181-4	IC04181-2	IC03063-14	IC03064-29		IC03082-24	P	1	57	57
A44	IC04174-4	IC04174-2	IC03063-45	IC03064-17		IC03082-25	P	1	58	58
A45	IC04183-4	IC04183-2	IC03063-47	IC03064-39		IC03082-26	P	1	58	58
A46	IC04182-4	IC04182-2	IC03063-47	IC03064-39		IC03082-27	P	1	60	60

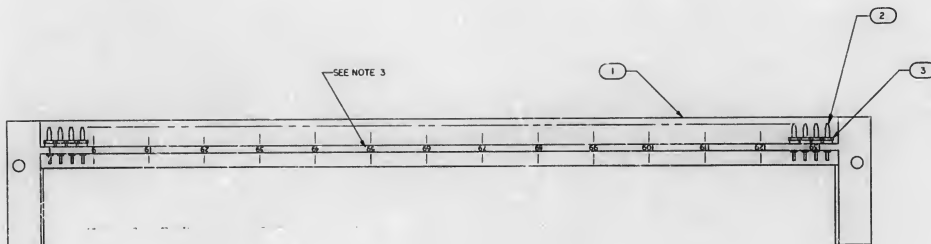
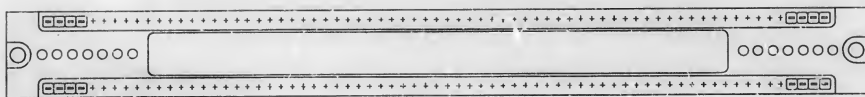
REVISIONS			
BY	DESCRIPTION	DATE	APPROVAL
J	REPLACES REV H WITH CHANGES 01F25	2/24/93	20
K	REVISED PER TORR 06024	2/25/93	20
L	REVISED PER TORR	2/25/93	20
M	REVISED PER TORR 07862	2/25/93	20
DR	NO. 00000000 CHK	2/25/93	20
N	DR 1.5 CHK OUT	2/25/93	20
P	REVISED PER TORR	2/25/93	20
DR	NO. 00000000 CHK	2/25/93	20

① REPLACES REV H WITH CHANGES

QTY REQD		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FAB NO	
				LIST OF MATERIALS			
<p style="text-align: center;">N T V INSTRUMENTATION LAB</p> <p style="text-align: center;">MANNED SPACECRAFT CENTER HOUSTON, TEXAS</p>							
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</p> <p>TERMINALS OR FRACTIONS DECIMALS ANGLES</p> <p>DO NOT SCALE THIS DRAWING</p> <p>MATERIAL</p>							
<p>TREATMENT</p> <p>NASA APPROVAL <i>Amold 1/10/68</i></p> <p>CONV IDENT NO SIZE NASA DRAWING NO</p> <p style="text-align: right;">E 1003082</p>							
NEXT ASST USED ON		FINAL FRWD		SCALE		WT SHEET 2 OF 2	
APPLICATION		SET APPROVAL <i>1/10/68</i>					



SEE NOTE 3



SEE NOTE 3

- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. ASSEMBLY FINE NO. 2'S PER ND002018
 3. MARK .160/080 HIGH WHITE PER ND002019

1142 1006775		INSULATOR WRAPPOST, MALE MIN		3
142 1006782-1		CONTACT WRAPPOST, MALE MIN		2
1 1004192		HEADER HOUSING		1
QTY REQD	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION		FIND NO
LIST OF MATERIALS				
MIL ITY INSTRUMENTATION LAB		MANNED SPACECRAFT CENTER		
UNLESS OTHERWISE SPECIFIED		HOUSTON, TEXAS		
DIMENSIONS ARE IN INCHES		HEADERS HOUSING ASSEMBLY		
TOLERANCES UNLESS OTHERWISE SPECIFIED				
FRACTIONS DECIMALS ANGLES				
DO NOT SCALE THIS DRAWING				
MATERIALS				
HEAT TREATMENT		NASA APPROVAL NO. E 1003128		
NEXT ASST. USED ON		NASA DRAWING NO. E 1003128		
FINISH		SHEET 1 OF 1		

100-443887-102

MODULE NO.	PART NO.	REV	EVEN	ODD	REF FLOW	REF WIRING	KEY POSITIONS
A17	1003812-1	-	1003813-2	1003814-2	1006543	1006123	ACESTSTY
A18	1003812-2	-	1003813-3	1003814-3	1006542	1006122	AFCHVWXY
A21	1003812-3	-	1003813-4	1003814-4	1006536	1006116	REF BUWVY
A22	1003812-4	-	1003813-5	1003814-5	1006555	1006133	ACDSTVY
A25	1003812-5	-	1003813-6	1003814-6	1006545	1006125	ACDSTWY
A34	1003812-6	-	1003813-7	1003814-7	1006555	1006135	ACDSTXY
A35	1003812-7	-	1003813-8	1003814-8	1006554	1006134	ACDSTVY
A26	1003812-8	-	1003813-9	1003814-9	1006549	1006129	ACDSTWY
A27	1003812-9	-	1003813-10	1003814-10	1006544	1006124	ACDSTXY
A28	1003812-10	-	1003813-11	1003814-11	1006552	1006132	ACDSTWY
A29	1003812-11	-	1003813-12	1003814-12	1006763	1006761	ACDSTWY
A30-A31	1003812-12	-	1003813-13	1003814-13	1006548	1006128	ACDSTWY
A32	1003812-13	-	1003813-14	1003814-14	1006546	1006126	ADSTWY
A33-A34	1003812-14	-	1003813-15	1003814-15	1006547	1006127	ADSTXY
A35	1003812-15	-	1003813-16	1003814-16	1006541	1006121	ADSTWY
A36	1003812-16	-	1003813-17	1003814-17	1006557	1006137	DSTWY
A37	1003812-17	-	1003813-18	1003814-18	1006550	1006130	ADSTWY
A38	1003812-18	-	1003813-19	1003814-19	1006551	1006131	ADSTWY

[illegible]

MOQULE NO.	PART NO.	REV	EVEN	ODD	REF FLOW	REF WIRING	KEY POSITIONS
A17	IC03B12-1	-	IC03B13-2	IC03B14-2	IC06543	IC06163	ACESTUY
A18	IC03B12-2	-	IC03B13-3	IC03B14-3	IC06542	IC06162	AFGHVXY
A21	IC03B12-5	-	IC03B13-4	IC03B14-4	IC06556	IC06136	AEFFGVWY
A22	IC03B12-4	-	IC03B13-5	IC03B14-5	IC06555	IC06135	ACDFSTVY
A23	IC03B12-5	-	IC03B13-6	IC03B14-6	IC06545	IC06135	ACDSTVY
A24	IC03B12-6	-	IC03B13-7	IC03B14-7	IC06555	IC06135	ACDHSXY
A25	IC03B12-7	-	IC03B13-8	IC03B14-8	IC06554	IC06134	ACDFSUY
A26	IC03B12-8	-	IC03B13-9	IC03B14-9	IC06549	IC06129	ACDSTVY
A27	IC03B12-9	-	IC03B13-10	IC03B14-10	IC06544	IC06124	ACFSHXY
A28	IC03B12-10	-	IC03B13-11	IC03B14-11	IC06552	IC06132	ACF65WY
A29	IC03B12-11	-	IC03B13-12	IC03B14-12	IC06559	IC06139	ACFHSVY
A30-A31	IC03B12-12	-	IC03B13-13	IC03B14-13	IC06548	IC06118	ACDHWY
A32	IC03B12-13	-	IC03B13-14	IC03B14-14	IC06546	IC06126	ACDSTWY
A33-A34	IC03B12-14	-	IC03B13-15	IC03B14-15	IC06547	IC06127	ACDSTVY
A35	IC03B12-15	-	IC03B13-16	IC03B14-16	IC06541	IC06121	ACDSTWY
A36	IC03B12-16	-	IC03B13-17	IC03B14-17	IC06557	IC06137	ACFHVXY
A37	IC03B12-17	-	IC03B13-18	IC03B14-18	IC06550	IC06130	ADGHTWY
A38	IC03B12-18	-	IC03B13-19	IC03B14-19	IC06551	IC06131	AEFHUVXY

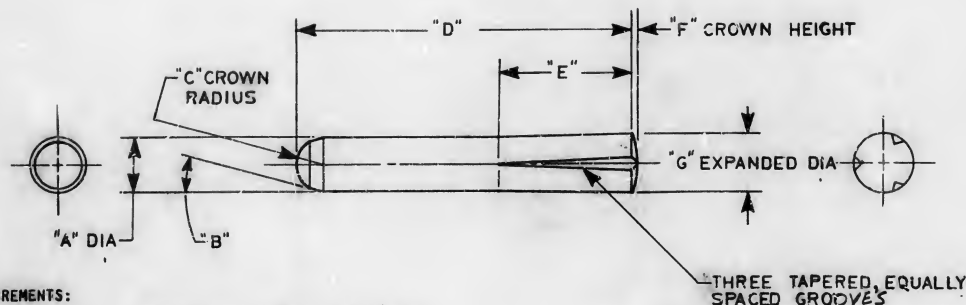
QTY REQD		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FR	
				LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN F.F.THS TOLERANCES ARE FRACTIONS DECIMALS ANGLES " " " " " "				MATERIALS LAB		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING DATE				DRAWING <u>100382</u> DATE <u>12/16/67</u> CHECKED <u>W. L. L. L.</u> APPROVAL <u>W. L. L. L.</u>		LOGIC MODULE ASSY (TABULATED)	
NEXT ASSEMBLY				NASA APPROVAL <u>W. L. L. L.</u> DATE <u>12-16-67</u>		CODE IDENT NO SIZE <u>E</u>	
APPLICATION				MIL APPROVAL <u>W. L. L. L.</u> DATE <u>12-16-67</u>		NADA DRAWING NO <u>100382</u>	
				SCALE		SHEET 2 OF 2	

NOTICE - THIS GOVERNMENT DRAWING, SPECIFICATIONS, OR OTHER DATA IS USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION. THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATIONS WHATSOEVER, AND THE FACT THAT THE GOVERNMENT HAS MADE AVAILABLE FOR THE USE OF ANY THAT SUPPLY TO THE SAME DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE INTERPRETED BY INDICATION OR OTHERWISE AS IN ANY MANNER LICENSED THE USER OR ANY OTHER PERSON OR CORPORATION, OR CONVEY, FOR ANY PURPOSE OR PURPOSES, TO INFRINGEMENT OF, OR WILL, ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1010620

REVISIONS TDAR 01664

SYN	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDAR 02856	3/28/64	W
B	REVISED PER TDAR 07020	3/17/64	W



1. GENERAL REQUIREMENTS:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- PARTS SHALL MEET THE QUALITY ASSURANCE REQUIREMENTS OF ND 1015404 CLASS 3.

2. INSPECTION & ACCEPTANCE:

- PARTS SHALL BE PACKAGED IN ACCORDANCE WITH MANUFACTURERS BEST COMMERCIAL PRACTICE.
- PACKAGES SHALL BE MARKED PER ND1002019 WITH MANUFACTURER'S NAME OR SYMBOL, PART NUMBER, THE NASA DRAWING NUMBER, DASH NO. AND REVISION LETTER.
- DIMENSIONS AND TOLERANCES PER DRAWING

3. DESIGN REQUIREMENTS:

- MATERIAL: PER TABLE I.
- FINISH: PASSIVATE PER MIL-F-14072 #E300.

TABLE I

PART NUMBER	A	B	C	D	E	F	G	MATERIAL
1010620-1	.0625 .0615	15°	.031	.390 .370	.150 .135	.0065	.067 .065	CRES QQ-S-763
1010620-2	.1875 .1855	15°	.094	1.010 1.030	.532 .547	.018	.197 .193	CLASS 303
1010620-3	.2500 .2480	15°	.125	1.310 1.330	.746 .726	.026	.262 .258	COND A
1010620-4	.0625 .0615	15°	.031	.390 .370	.150 .135	.0065	.067 .065	CRES QQ-S-763
1010620-5	.1875 .1855	15°	.094	1.010 1.030	.532 .545	.018	.197 .193	TYPE 416 HEAT
1010620-6	.2500 .2480	15°	.125	1.310 1.330	.746 .726	.026	.262 .258	TREAT RC-39 MIL-H-8875

PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>R. J. [signature]</i> DATE <i>3/17/64</i>		PIN GUIDE	
CHECKED <i>[signature]</i>		SPECIFICATION CONTROL DRAWING	
APPROVAL <i>[signature]</i>		NASA DRAWING NO. 1010620	
APPROVAL <i>[signature]</i>		CODE IDENT NO. C	
NASA APPROVAL <i>[signature]</i>		SIZE C	
MIT APPROVAL <i>[signature]</i>		SCALE NONE	
SHEET 1		OF 1	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
± //	± .005	± °
DO NOT SCALE THIS DRAWING MATERIAL		
SEE NOTE 2		
HEAT TREATMENT //		
FINAL FINISH		
SEE NOTE 3		
NEXT ASSY	USED ON	APPLICATION

MASTER

NOTICE - WHEN GOVERNMENT DRAWINGS SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR A LIABILITY WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OF PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREOF.

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED BY MIL-D-70327.
- SUPPLIER SHALL CONFORM TO QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 3.
- UNLESS OTHERWISE SPECIFIED SCREWS SHALL MEET THE REQUIREMENTS OF FF-S-86, TYPE IV.
- INSERT SHALL MEET THE REQUIREMENTS OUTLINED IN MIL-F-18240, TYPE B.
- PERFORMANCE REQUIREMENT IN ACCORDANCE WITH MIL-F-18240.

2. INSPECTION AND ACCEPTANCE:

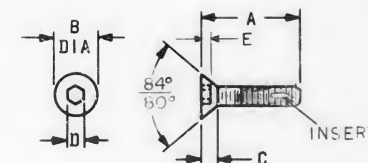
- MATERIAL: CRES PER FF-S-86.
- FINISH: PASSIVATE PER MIL-F-14072, E300.
- DIMENSIONS: AS SHOWN IN TABLE
- SCREWS SHALL BE BURR FREE.

E. MARKING:

- PACKAGE: INTERNAL INDIVIDUAL OR COLLECTIVE PACKAGES AND EXTERNAL PACKAGING SHALL BE MARKED WITH THE FOLLOWING INFORMATION:
 - SUPPLIER'S NAME
 - NASA PART NUMBER, DASH NUMBER AND REVISION LETTER PER ND1002019.
 - DATE CODE OR DATE OF MANUFACTURE
- MANUFACTURER'S PART NUMBER MAY APPEAR ON THE PART OR PACKAGE.

NASA PART NUMBER	THREAD SIZE	DIMENSIONS				
		A ±.015	B ±.015	C MAX	D	E MIN
1010628-1	2-56NC-3A	.187	.182	.064	.0500	.038
	-2	.250			.0510	
	-3	.312				
	-4	.375				
	-5	.437				
	-6	.500				
	-7					
	-8					
	-9					
	-10					
	-11					
	4-40NC-3A	.187	.240	.083	.0625	.055
	-13	.250			.0635	
	-14	.312				
	-15	.375				
	-16	.437				
	-17	.500				
	-18	.625	.240	.083	.0625	.055
	-19	1.750	.240	.083	.0635	.055
	-20	1.500	.240	.083	.0635	.055
	-21					
	-22					
	6-32NC-3A	.187	.292	.097	.0781	.066
	-24	.250			.0791	
	-25	.312				
	-26	.375				
	-27	.437				
	-28	.500				
	-29	.562				
	-30	.525				
	-31	.687				
	-32	.750				
	-33	.812				
	-34	.875				
	-35	.937				
	-36	1.000				

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
	INITIAL RELEASE CLASS A PER TDRR 02742	8/11/63	SW
A	REVISED PER TDRR 10044	8/16/64	WH
B	REVISED PER TDRR 11509	8/16/64	WH
C	REVISED PER TDRR 13956	11-2-64	WH
D	REVISED PER TDRR 15575	12/6/65	WH




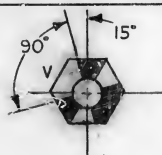
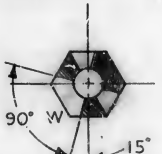
PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE MASS 02139		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY: [Signature] DATE: 8-16-63		SCREW, FLAT HEAD SELF LOCKING SOCKET, HEX	
CHECKED BY: [Signature] DATE: 8-16-63			
APPROVAL BY: [Signature] DATE: 8-16-63			
MATERIAL: SEE REQUIREMENTS			
HEAT TREATMENT: NONE			
FINAL FINISH: SEE REQUIREMENTS			
NEXT ASSY	USED ON	CODE IDENT NO.	NASA DRAWING NO.
		C	1010628
APPLICATION		SCALE NONE	SHEET 1 OF 1

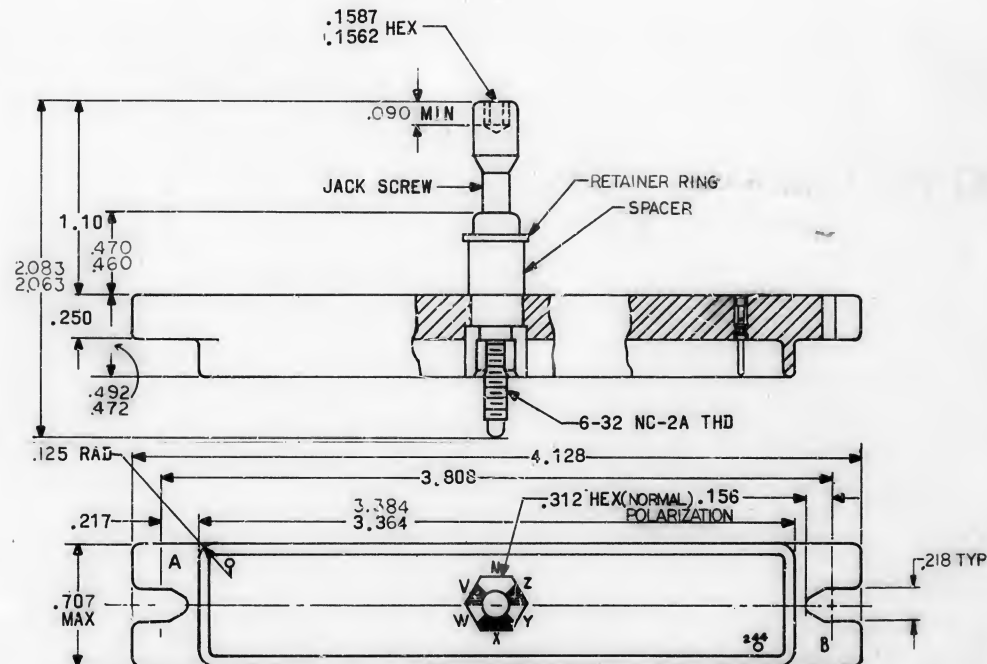
NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY ASSISTED IN THE SAID DRAWING, SPECIFICATION, OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER, INCLUDING THE DESIGN OR ANY OTHER METHOD OF CONSTRUCTION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

1010641

REVISIONS 02925			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR 02925		Slip 61K
A	REVISED PER TDRR 06528		PAK 61K
B	REVISED PER TDRR 11943	9/1/64	WIR.

NASA PART NUMBER	POLARIZING CHART	NO. OF CONTACTS
1010641-144		244
1010641-244		244
1010641-344		244

MATES WITH 1010642



PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1062034 FOR THIS DRAWING.

QTY REQ	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIG. NO.
		LIST OF MATERIALS	
	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS CONTRACT 9-497	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	DRAWN BY: R. W. Wilson CHECKED BY: Wilson APPROVAL: 9/1/64	CONNECTOR - PLUG ELECTRICAL (244 NO. 22 PIN CONTACTS)	
	HEAT TREATMENT: NONE	SPECIFICATION CONTROL DRAWING	
	FINAL FINISH: NONE	CODE IDENT NO. C	NASA DRAWING NO. 1010641
NEXT ASSY	USED ON	SCALE: NONE	SHEET 1 OF 2
APPLICATION			

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT HAS FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSES THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERS ANY RIGHTS OR PERMISSION TO REPRODUCE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING SYMBOLS, ABBREVIATIONS AND REFERENCE DESIGNATIONS IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED IN MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 3.
- C. UNITS SHALL BE CAPABLE OF MEETING ALL QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002052.
- D. CONNECTOR IS DESIGNED TO USE 4 PIN CONTACTS PER 1010738-1.

2. INSPECTION AND ACCEPTANCE:

A. MECHANICAL REQUIREMENTS:

(1) MATERIAL:

- (a) BODY: DIALYLPHTHALATE PER MIL-P-19833, TYPE SDI-5 OR CDI-30F AS APPLICABLE. (UNPIGMENTED)

(b) HARDWARE:

POLARIZING BOSS: ALUMINUM ALLOY GRADE 7075T6, PER QQ-A-277-1
 JACKSCREW AND METAL INSERT: CORROSION RESISTANT STEEL, CLASS 303, OR 303 SE CONDITION A OR B PER MILITARY SPECIFICATION QQ-S-763.
 SPACER: BRASS COMPOSITION 11 PER MILITARY SPECIFICATION QQ-B-626.
 RETAINING RING: MS-16632-28 PER MILITARY SPECIFICATION MIL-R-21248.

(2) FINISH:

HARDWARE:

POLARIZING BOSS: GRAY ANODIZE PER SPECIFICATION MIL-A-8625, CLASS 1.
 JACKSCREW AND METAL INSERT: PASSIVATE PER MIL-F-14072 FINISH NO. E-300. JACKSCREW IS LUBRICATED PER SPECIFICATION MIL-L-8937

SPACER: NICKEL PLATE PER QQ-N-290.

(3) FOR POLARIZATION SEE TABLE 1

DIMENSIONS: AS PER DRAWING

(4) MARKING:

PIECEMARKING: UNITS SHALL BE MARKED IN ACCORDANCE WITH ND1002019 WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, NASA PART NUMBER, AND REVISION LETTER, AND DATE CODE OR DATE OF MANUFACTURE. THE MANUFACTURER'S PART NUMBER MAY APPEAR ON THE PART.

(5) PACKAGE: INTERNAL INDIVIDUAL OR COLLECTIVE PACKAGES AND EXTERNAL PACKAGING SHALL BE MARKED WITH THE FOLLOWING INFORMATION:

SUPPLIER'S NAME
 NASA PART NUMBER AND REVISION LETTER
 SUPPLIER'S LOT OR SERIAL NUMBER
 DATE CODE, OR DATE OF MANUFACTURE

(6) MANUFACTURER'S PART NUMBER MAY APPEAR ON THE PACKAGE.

3. DESIGN REQUIREMENTS:

A. ELECTRICAL REQUIREMENTS WITH CONTACTS INSTALLED

- (1) INSULATION RESISTANCE: 2000 MEGOHMS MINIMUM AT 150°F MEASURED BETWEEN ANY TWO ADJACENT CONTACTS AND BETWEEN THE SHELL OR HARDWARE AND ANY ADJACENT CONTACT WHEN TESTED IN ACCORDANCE WITH MIL-STD-202 METHOD 302, CONDITION C.
- (2) DIELECTRIC STRENGTH: SEA LEVEL - NO EVIDENCE OF BREAKDOWN OR FLASHOVER WHEN TESTED AT 1500 VRMS. 90,000 TO 130,000 FT. - NO EVIDENCE OF BREAKDOWN OR FLASHOVER WHEN 100 VRMS APPLIED BETWEEN ANY PAIR OF CONTACTS AND BETWEEN THE HARDWARE AND ANY CONTACT WHEN TESTED IN ACCORDANCE WITH MIL-STD-202, METHOD 301.
- (3) VOLTAGE RATINGS:

	VOLTS DC	VOLTS AC RMS
SEA LEVEL	490	350
10,000 FT.	390	280
60,000 FT.	140	100

WITHSTANDING VOLTAGE (SEA LEVEL) 1500 VOLTS RMS 60 CPS WITHOUT FLASHOVER.

B. MECHANICAL

(1) CONTACT RETENTION FORCE

WHEN CONTACTS ARE PROPERLY INSTALLED IN THEIR USING CONNECTOR, THEY ARE CAPABLE OF WITHSTANDING (WITHOUT DAMAGE) A MIN OF 15 LBS. AXIAL LOAD APPLIED IN EITHER DIRECTION AT A RATE OF 1 POUND PER SECOND.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIG. NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS CONTRACT 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Paul Wilson</i> DATE <i>11 AUG 63</i> CHECKED <i>Wilson</i> 19 AUG 63 APPROVAL <i>J. P. Wilson</i> 24 AUG 63		CONNECTOR - PLUG ELECTRICAL (244 NO. 22 PIN CONTACTS SPECIFICATION CONTROL DRAWING)	
NASA APPROVAL <i>W. J. Wilson</i> 25 AUG 63		CODE IDENT NO.	SIZE
MIT APPROVAL <i>W. J. Wilson</i> 25 AUG 63		C	1010641
SCALE NONE		WT	SHEET 2 OF 2

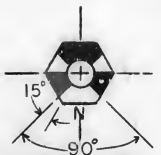
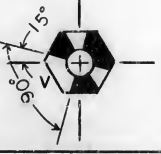

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
± .005	± .002	± .005
DO NOT SCALE THIS DRAWING		
MATERIAL		
SEE NOTES		
HEAT TREATMENT		
NONE		
FINAL FINISH		
NONE		
NEXT ASSY	USED ON	APPLICATION

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PREPARED, OR IN ANY MANNER SUPPLIED THE SAID SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY SPECIFICATION OR OTHERWISE AS IN ANY MANNER INCURRING THE HOLDER OF ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY POTENTIAL INVENTIONS THAT MAY IN ANY WAY BE RELATED THEREBY.

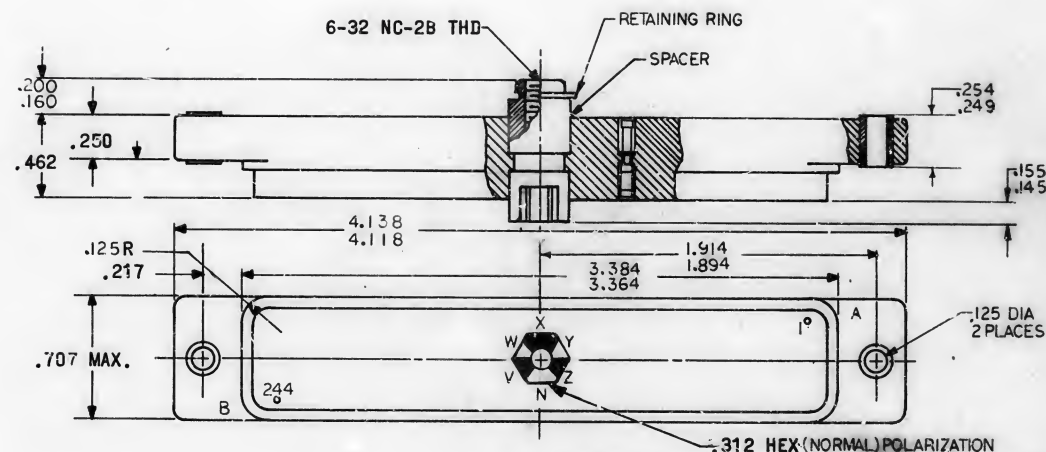
1010642

REVISIONS 02925

SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR 06532	9/1/64	WK
A	REVISED PER TDRR 06532		WK
B	REVISED PER TDRR 11944	9/1/64	WK

NASA PART NUMBER	POLARIZING POSITION	NO. OF CONTACT CAVITIES
1010642-144		244
1010642-244		244
1010642-344		244

APPLICATION DATA (FOR REFERENCE):
MATES WITH 1010641.



PROCURE ONLY FROM APPROVED SOURCES LISTED ON
ND 1002034 FOR THIS DRAWING.

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO	
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE MASS CONTRACT				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <i>R. J. Sullivan</i> DATE <i>10/15/63</i> CHECKED <i>Wilson</i> DATE <i>20 Aug 63</i> APPROVAL <i>S. P. Duggan</i> DATE <i>9/1/64</i>				CONNECTOR - RECEPTACLE (244 NO. 22 SOCKET CONTACTS) SPECIFICATION CONTROL DRAWING			
NESA APPROVAL <i>Wilson</i> DATE <i>9/1/64</i> MIT APPROVAL <i>Wilson</i> DATE <i>9/1/64</i>				CODE IDENT NO. SIZE C		NASA DRAWING NO. 1010642	
SCALE NONE				WT		SHEET 1 OF 2	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITE GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY AND ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT HAS FORMULATED, FURNISHED OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR ENDORSEMENT AS TO ANY PATENT RIGHTS OR PERMISSION TO REPRODUCE, OR TO MAKE, OR TO SELL, ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREBY.

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING SYMBOLS, ABBREVIATIONS AND REFERENCE DESIGNATIONS IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED IN MIL-D-70327.
- SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 3.
- UNITS SHALL BE CAPABLE OF MEETING ALL QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002052.
- CONNECTOR IS DESIGNED TO UTILIZE SOCKET CONTACTS PER 1010738-2.

2. INSPECTION AND ACCEPTANCE:

A. MECHANICAL REQUIREMENTS:

(1) MATERIAL:

- BODY:** DIALLYPHTHALATE PER MIL-P-19833, TYPE GDI-30F (UNPIGMENTED)
- HARDWARE:**
 - POLARIZING BOSS:** ALUMINUM ALLOY GRADE 7075T6 PER QQ-A-277-1
- METAL INSERT:** CRES, CLASS 303 OR 303SE CONDA OR B PER QQ-S-763.
- SPACER:** BRASS, COMPOSITION II PER QQ-S-626
- RETAINING RING:** MS-16632-28 PER MILITARY SPECIFICATION MIL-R-21248.

B. FINISH:

(1) HARDWARE:

- POLARIZING BOSS:** GRAY ANODIZE PER SPECIFICATION MIL-A-8625 CLASS 1.
- METAL INSERT:** PASSIVATE PER MIL-F-14072 FINISH NG. E-300.

- SPACER:** NICKEL PLATE PER QQ-N-290.

FOR POLARIZATION SEE TABLE I

DIMENSIONS: AS PER DRAWING

MARKING:

- PIECEMARKING:** UNITS SHALL BE MARKED IN ACCORDANCE WITH ND 1002019 WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, NASA PART NUMBER, AND REVISION LETTER, AND DATE CODE OR DATE OF MANUFACTURE. THE MANUFACTURER'S PART NUMBER MAY APPEAR ON THE PART.

- PACKAGE:** INTERNAL INDIVIDUAL OR COLLECTIVE PACKAGES AND EXTERNAL PACKAGING SHALL BE MARKED WITH THE FOLLOWING INFORMATION:

SUPPLIER'S NAME
NASA PART NUMBER AND REVISION LETTER
SUPPLIER'S LOT OR SERIAL NUMBER
DATE CODE, OR DATE OF MANUFACTURE

- MANUFACTURER'S PART NUMBER** MAY APPEAR ON THE PACKAGE.

3. DESIGN REQUIREMENTS:

A. ELECTRICAL REQUIREMENTS WITH CONTACTS INSTALLED

- INSULATION RESISTANCE:** 2000 MEGOHMS MINIMUM AT 150°F MEASURED BETWEEN ANY TWO ADJACENT CONTACTS AND BETWEEN THE SHELL OR HARDWARE AND ANY ADJACENT CONTACT WHEN TESTED IN ACCORDANCE WITH MIL-STD-202 METHOD 302, CONDITION C.
- DIELECTRIC STRENGTH:** SEA LEVEL - NO EVIDENCE OF BREAKDOWN OR FLASHOVER WHEN TESTED AT 1500 VRMS. 90,000 TO 130,000 FT. - NO EVIDENCE OF BREAKDOWN OR FLASHOVER WHEN 100 VRMS APPLIED BETWEEN ANY PAIR OF CONTACTS AND BETWEEN THE HARDWARE AND ANY CONTACT WHEN TESTED IN ACCORDANCE WITH MIL-STD-202, METHOD 301.
- VOLTAGE RATINGS:**

	VOLTS DC	VOLTS AC RMS
SEA LEVEL	490	350
10,000 FT.	390	280
60,000 FT.	140	100

WITHSTANDING VOLTAGE (SEA LEVEL) 1500 VOLTS RMS 60 CPS WITHOUT FLASHOVER.

A. MECHANICAL

A. CONTACT RETENTION FORCE

- WHEN CONTACTS ARE PROPERLY INSTALLED IN THEIR USING CONNECTOR, THEY ARE CAPABLE OF WITHSTANDING (WITHOUT DAMAGE) A MIN OF 15 LBS. AXIAL LOAD APPLIED IN EITHER DIRECTION AT A RATE OF 1 POUND PER SECOND.**

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE MASS 02139-4377		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>R. J. Quinn</i> DATE <i>10 Aug 63</i> CHECKED <i>Wilson</i> 20 Aug 63 APPROVAL <i>[Signature]</i> APPROVAL <i>[Signature]</i>		CONNECTOR - RECEPTACLE (244 NO. 22 SOCKET CONTACTS)	
SPECIFICATION CONTROL DRAWING		NASA DRAWING NO.	
NASA APPROVAL <i>[Signature]</i> 9/5/63 MIT APPROVAL <i>W. J. Quinn</i> 10/1/63		CODE IDENT NO. C	1010642
SCALF NONE		WT	SHEET 2 OF 2

1010642

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR 0295	10/1/63	WJL
A	REVISED PER TDRR C6532		WJL
B	REVISED PER TDRR 11944	10/1/63	WJL

NOTICE: WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY ASSUMES NO RESPONSIBILITY AND ANY OBLIGATION UNLAWFUL AND THE FACT THAT THE GOVERNMENT HAS FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE DATA IS NOT TO BE CONSIDERED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING SYMBOLS, ABBREVIATIONS AND REFERENCE DESIGNATIONS IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED IN MIL-D-70327.
- THESE CONNECTORS SHALL CONFORM TO THE REQUIREMENTS OF MIL-C-26482 (MS3126F16-325) AND WITH THE PARTICULAR REQUIREMENTS LISTED BELOW.
- SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 3.
- UNITS SHALL BE CAPABLE OF MEETING ALL QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002052 UNLESS MODIFIED OR AMENDED BY THE INSPECTION AND ACCEPTANCE REQUIREMENTS LISTED BELOW.
- CONTACTS SUPPLIED SEPARATELY IN A PLIOFILM BAG WITH 10% SPARES.
- CONTACTS SHALL BE PER ALL REQUIREMENTS OF MIL-C-23216 AND WIRE WELL AREA PER MS 3190.

2. INSPECTION AND ACCEPTANCE:

A. ELECTRICAL REQUIREMENTS:

- ELECTRICAL CHARACTERISTICS (IN ACCORDANCE WITH THE MILITARY SPECIFICATIONS):
 - DIELECTRIC WITHSTANDING VOLTAGE: 1500 VRMS.
 - INSULATION RESISTANCE: 5000 MEGOHMS MINIMUM (500 VDC)

B. MECHANICAL REQUIREMENTS:

- MARKING: UNITS SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE NASA PART NUMBER AND REVISION LETTER, AND THE MANUFACTURER'S NAME AND/OR SYMBOL. THE MANUFACTURER'S PART NUMBER MAY APPEAR ON THE PART OR PACKAGE. EACH CONTAINER SHALL INCLUDE THE NASA DRAWING AND DASH NUMBER PLUS THE REVISION LETTER.

3. DESIGN REQUIREMENTS:

A. OPERATING LIFE: SEE RELIABILITY NOTE

B. STORAGE LIFE: 1 YEAR WITHOUT GROMMET DETERIORATION.

C. CONSTRUCTION:

- TYPE CONNECTOR: ENVIRONMENT SEALED BY A GROMMET AND INSERT WITH A STRAIN RELIEF CLAMP, SOLID SHELL AND POSITIVE INSERT RETENTION.
- TYPE CONTACT: CRIMP CONTACTS PER MS3193 (SOCKETS)
- NUMBER AND SIZE OF CONTACTS: SEE TABLE
- COUPLING: BAYONET.
- SHELL: ALUMINUM ALLOY, PER QQ-A-591, FINISH PER MIL-F-14072, NUMBER E-516--ALUMILITE 225 (GRAY IN COLOR).

D. RELIABILITY: CONNECTORS SHALL BE CAPABLE OF WITHSTANDING 500 CYCLES OF ENGAGEMENT AND DISENGAGEMENT WITHOUT ELECTRICAL OR MECHANICAL FAILURE.

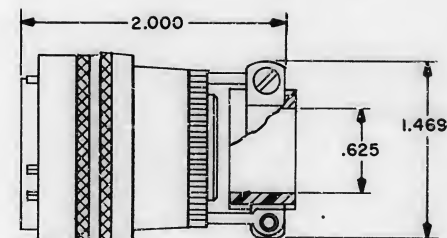
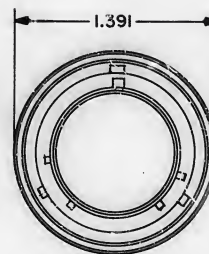
E. ELECTRICAL:

- INSULATION RESISTANCE (+125°C): 50 MEGOHMS MINIMUM. (500 VDC)
- CONTACT RESISTANCE: 50 MILLIVOLTS MAXIMUM AT RATED CURRENT.
- CONTACT CURRENT RATING: 7.5 AMPERES.
- VOLTAGE RATING: 700 VDC AND 500 VRMS
- INSERT ARRANGEMENT: PER MS 33713.

NASA PART NUMBER	NO. OF CONTACTS	INSERT ROTATION DEGREES
1010674-1	32#20AWG	0
-2		138
-3		222
-4		265

PROCURE ONLY FROM APPROVED SOURCES LISTED
ON ND 1002034 FOR THIS DRAWING

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm .005 \pm
		DO NOT SCALE THIS DRAWING
		MATERIAL SEE REQUIREMENTS
		HEAT TREATMENT NONE
NEXT ASSY	USED ON	FINAL FINISH NONE
APPLICATION		



QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS DWG NO. 1010674-1		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>R. Turner</i> DATE 10/1/63		CONNECTOR PLUG, ELECTRICAL, CABLE CONNECTING,	
CHECKED <i>C. Wilson</i> DATE 12/1/63		SPECIFICATION CONTROL DRAWING	
APPROVAL <i>J. L. ...</i> DATE 12/1/63		NASA DRAWING NO. 1010674	
NASA APPROVAL <i>J. L. ...</i> DATE 12/1/63		CODE IDENT NO. SIZE C	
MIT APPROVAL <i>W. J. ...</i> DATE 10/1/63		SCALE NONE WT	SHEET 1 OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT HAS FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFERRING ANY RIGHTS OF PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

9890101

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
—	INITIAL RELEASE CLASS A PER TDRR	05/01/6	7/6/64 WIL

REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND1015404 CLASS 3.
- C. EACH SPOOL AND SHIPPING CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS, AND DATE OF MANUFACTURE.

2. ACCEPTANCE AND INSPECTION REQUIREMENTS:

- A. THIS WIRE SHALL MEET THE REQUIREMENTS OF ND1002105.

PROCURE ONLY FROM APPROVED SOURCES LISTED ON
ND 1002034 FOR THIS DRAWING.

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DWS. NO. _____ CONTRACT _____		DRAWN <u>W. S. M. 1-6-69</u> DATE <u>1-6-69</u>	
CHECKED <u>A. M. 1-6-69</u>		APPROVAL <u>W. S. M. 1-7-69</u>	
DO NOT SCALE THIS DRAWING		APPROVAL _____	
MATERIAL		NASA APPROVAL <u>W. S. M. 1-7-69</u>	
SEE REQUIREMENTS		MIT APPROVAL <u>W. S. M. 1-7-69</u>	
HEAT TREATMENT _____		CODE IDENT NO.	SIZE
NEXT ASSY _____		SCALE NONE	WT
USED ON _____		NASA DRAWING NO.	
APPLICATION		1010685	
		SHEET 1 OF 2	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT TAKES NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREOF.

8890101

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR	05616	7 Jan 64 WLL

NASA PART NUMBER	AWG SIZE PER COND	NO OF STRDS	STRD SIZE	MAX COND DIA	MAX. COND RES/1000 AT 20°C	INSULATION		NO. OF COND	SHIELD DIMS		JACKET		TYPE (ND1062105)	
						O. D.			COLOR	STRD AWG	DIA OVER SHIELD	O.D.		COLOR
						MIN	MAX							
1010685-1	24	19	36	0.027	25.38	.040	.047	WHITE	1	—	—	—	—	I
-2	22		34	0.033	15.98	.046	.054		1	—	—	—	—	I
-3	16		29	0.061	4.95	.078	.086		1	—	—	—	—	I
-4	24		36	0.027	25.38	.040	.047		1	36	.065/.072	.080/.102	WHITE	VI
-5								WHITE RED	2	36	.105/.119	.126/.155		VII
-6								WHITE RED BLUE	3	36	.105/.119	.126/.155		VII
-7								BLUE BROWN	2	36	.105/.119	.126/.155		VII

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
-LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>WLL</i> DATE <i>1-6-64</i> CHECKED <i>A. Mats</i> <i>1-6-64</i> APPROVAL <i>for 6 MAY 64</i> <i>1-7-64</i> APPROVAL _____		STRANDED COPPER WIRE IRRADIATED POLYOLEFIN INSULATED SPECIFICATION CONTROL DRAWING	
NASA APPROVAL <i>WLL</i>	CODE IDENT NO.	SIZE	NASA DRAWING NO.
MIT APPROVAL <i>WLL</i>		C	1010685
SCALE NONE		WT	SHEET 2 OF 2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		
FRACTIONS	DECIMALS	ANGLES
±	±	±
DO NOT SCALE THIS DRAWING MATERIAL		
SEE REQUIREMENTS		
HEAT TREATMENT —		
NEXT ASSY	USED ON	FINAL FINISH —
APPLICATION		

4

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROJECT OR CONTRACT, THE UNITED STATES GOVERNMENT HEREBY INCURS NO LIABILITY FOR ANY OBLIGATION WHATSOEVER AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PREPARED OR IN ANY WAY SUPPLIED THE DATA, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERE TO.

REQUIREMENTS:

1. GENERAL:

- INTERPRET DRAWING SYMBOLS, ABBREVIATIONS AND REFERENCE DESIGNATIONS IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED IN MIL-D-70327.
- SUPPLIER PROCESS AND QUALITY CONTROL, INCLUDING FINAL TESTING, SHALL BE IN ACCORDANCE WITH SPECIFICATION ND 1015404, CLASS 3.
- EACH SHIPPING AND UNIT CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER, AND REVISION LETTER, NET CONTENTS, LOT NUMBER, DATE OF MANUFACTURE, AND EXPIRATION DATE FOR UNOPENED CONTAINERS.

2. INSPECTION AND ACCEPTANCE:

- MATERIAL: LIQUID CATALYST
- COLOR: CLEAR
- VISCOSITY: 18,000 TO 32,000 CENTIPOISES AT $25 \pm 2^\circ\text{C}$ WHEN TESTED IN ACCORDANCE WITH ASTM-D-1824 EXCEPT BROOKFIELD VISCOMETER MODEL RVT SHALL BE USED WITH A NO. 6 SPINDLE AT 10 RPM.
- PROPERTIES: WHEN MIXED AND CONDITIONED AS SPECIFIED IN 1010657, SECTION 2B, THIS MATERIAL SHALL BE CAPABLE OF PROVIDING THE CURE AND POT LIFE PROPERTIES SPECIFIED IN 1010657.

3. DESIGN REQUIREMENTS:

- SHELF LIFE: WHEN STORED AT BELOW 80°F IN SEALED CONTAINERS THIS MATERIAL SHALL HAVE A MINIMUM OF 9 MONTHS USABLE SHELF LIFE WHEN RECEIVED.
- INTENDED USE: THIS MATERIAL IS INTENDED FOR USE AS A CATALYST FOR CURING EPOXY BONDING RESIN 1010657.
- CURED MATERIAL: WHEN MIXED AND CURED AS SPECIFIED IN 1010657, SECTION 3C, THIS MATERIAL SHALL BE CAPABLE OF IMPARTING THE DIELECTRIC AND SHEAR STRENGTH PROPERTIES SPECIFIED IN 1010657.

PROCURE ONLY FROM APPROVED SOURCES LISTED
ON ND 1002034 FOR THIS DRAWING

	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
	TOLERANCES ON
	FRACTIONS DECIMALS ANGLES
	\pm \pm \pm
	DO NOT SCALE THIS DRAWING
	MATERIAL
	SEE REQUIREMENTS
	HEAT TREATMENT
	NONE
NEXT ASSY	USED ON
	FINAL FINISH
APPLICATION	NONE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS Contract NAS 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN PATTERSON DATE 27-OCT-63		CATALYST	
CHECKED WILSON DATE 23-OCT-63		SPECIFICATION CONTROL DRAWING	
APPROVAL <i>L.C. Smith</i> DATE 1-7-64		NASA DRAWING NO. 1010686	
APPROVAL		CODE IDENT NO.	SIZE
NASA APPROVAL <i>[Signature]</i>			C
MIT APPROVAL <i>[Signature]</i>		SCALE NONE	WT
		SHEET 1	OF 1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY WHATSOEVER, WHATSOEVER, OR IN ANY MANNER, FOR THE QUALITY, RELIABILITY, OR PERFORMANCE OF ANY ITEM OR MATERIAL WHICH IS USED THEREIN, OR FOR ANY PATENTED INVENTION, THAT MAY IN ANY WAY BE RELATED THEREBY.

1010738

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
—	CLASS A RELEASE PER TDR 05837		WIL
A	REVISED PER TDR 06524	2/2/64	WIL
B	REVISED PER TDR 12790	9/29/64	WIL
C	REVISED PER TDR 13337	10/1/64	WIL
D	REVISED PER TDR 22128	9/23/65	WIL

1. GENERAL:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.
- SUPPLIERS SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN NO 1015404, CLASS 3.
- UNITS SHALL BE CAPABLE OF MEETING THE QUALIFICATION REQUIREMENTS SPECIFIED IN NO 1002052.
- PRESERVATION, PACKAGING, PACKING AND CONTAINER MARKING PER NO1002215, CLASS 1, CODE 3.

2. ACCEPTANCE AND INSPECTION

- DIMENSIONS: AS SHOWN
- CONTACT ENGAGING AND SEPARATING FORCE: TEST USING MINIMUM SIZE PIN (SEE 3.J)
- CONTACT RETENTION: SAMPLE PER MIL-STD-105, AQL 0.65

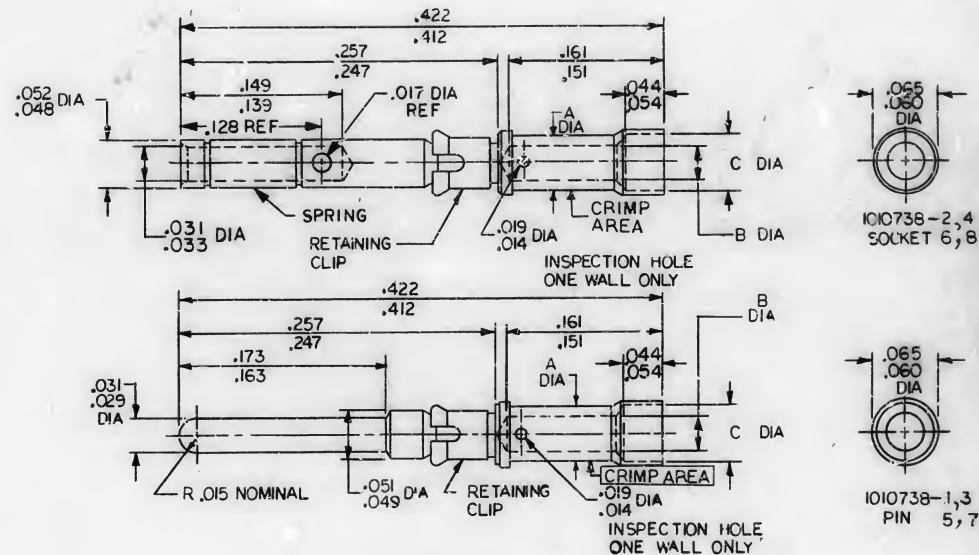
3. DESIGN REQUIREMENTS

- BODY: SHALL BE HALF HARD BRASS PER QQ-B-626, COMPOSITION 22.
 - FINISH: (a) DASH 1,2,3,4: GOLD PLATED PER MIL-G-45204, TYPE II, CLASS 1 OVER SILVER PLATE
(b) DASH 5,6,7,8: GOLD PLATED PER MIL-G-45204, TYPE II, CLASS 2 (.000100 GOLD, MIN, OVER COPPER FLASH) AND CRIMP AREA SHALL BE ANNEALED.
- SPRING (SOCKET): BERYLLIUM COPPER PER QQ-C-533, CONDITION 1/4H, HEAT TREATED.
 - FINISH: GOLD PLATED PER MIL-G-45204, TYPE II, CLASS 1.
- RETAINING CLIP: BERYLLIUM COPPER PER QQ-C-553, CONDITION 1/4H, HEAT TREATED.
 - FINISH: (a) DASH 1,2,3,4: GOLD FLASH OVER .0001 MIN NICKEL COATING (ELECTROLESS) PER MIL-C-26074.
(b) DASH 5,4,7,8: .0001 MIN NICKEL COATING (ELECTROLESS PER MIL-C-26074, DYED RED.

- CONCENTRICITY: ALL DIAMETERS SHALL BE CONCENTRIC WITHIN 0.002 TIR.
- CURRENT RATING (MATED): PER TABLE I
- CONTACT RETENTION: 15 POUNDS MINIMUM, AFTER 10 INSERTIONS AND WITHDRAWALS USING CONNECTORS 1010347 AND 1010411 OR EQUIVALENT. TEST PER MIL-C-22857.
- CRIMP AND CONTACT RESISTANCE: WIRE PER MIL-W-16878, TYPE B. TEST PER MIL-C-22857. PER TABLE I.
- CRIMP TENSILE STRENGTH: WIRE PER MIL-W-16878, TYPE B. TEST PER MIL-C-22857. PER TABLE I.
- CONTACT ENGAGING AND SEPARATING FORCE: 0.5 OUNCES MINIMUM- 5 OUNCES MAXIMUM. MAXIMUM PIN DIAMETER 0.0310 +0.0000; MINIMUM PIN DIAMETER 0.0290 +0.0001 -0.0001

TEST PIN TO BE TUNGSTEN CARBIDE PER MS3197.

DASH NO.	CURRENT RATING	CRIMP CONTACT RESISTANCE		WIRE BARREL SIZE NO.	CRIMP TENSILE STRENGTH	DIMENSIONS		
		NORMAL	AFTER HUMIDITY			A	B	C
-1	3A	0.025 VDC MAX	0.045 VDC MAX	#22	15 LBS MIN	.058 .054	.037 .033	.055 .050
-2	3A	0.025 VDC MAX	0.045 VDC MAX	#22	15 LBS MIN	.058 .054	.037 .033	.055 .050
-3	2A	0.02 VDC MAX	0.04 VDC MAX	#28	2 LBS MIN	.041 .037	.021 .017	.050 0.45
-4	2A	0.02 VDC MAX	0.04 VDC MAX	#28	2 LBS MIN	.041 .037	.021 .017	.050 0.45
-5	3A	0.025 VDC MAX	0.045 VDC MAX	#22	15 LBS MIN	.058 .054	.037 .033	.055 .050
-6	3A	0.025 VDC MAX	0.045 VDC MAX	#22	15 LBS MIN	.058 .054	.037 .033	.055 .050
-7	2A	0.02 VDC MAX	0.04 VDC MAX	#28	2 LBS MIN	.041 .037	.021 .017	.050 0.45
-8	2A	0.02 VDC MAX	0.04 VDC MAX	#28	2 LBS MIN	.041 .037	.021 .017	.050 0.45



QTY REQ	PART OR IDENTIFYING NO.	NUMERATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN DE ZENZO DATE 11/15/64 CHECKED A. Galant 12/1/64 APPROVAL J. Galant 12/1/64		CONTACT, CRIMP TYPE NO. 22 SIZE, PIN & SOCKET SPECIFICATION CONTROL DRAWING	
NASA APPROVAL [Signature] 11/21/68		CODE IDENT NO.	NASA DRAWING NO.
MIT APPROVAL [Signature] 12/2/68		C	1010738
SCALE NONE		WT	SHEET OF

PROCURE ONLY FROM APPROVED SOURCES LISTED ON NO 1002034 FOR THIS DRAWING

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY AUTHORIZED GOVERNMENT PROCUREMENT OPERATION, THE USER WILL BE RESPONSIBLE FOR THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FINANCED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA AS WELL AS BE RESPONSIBLE FOR REPLICATION OR OTHERWISE AS TO THE BARRIER LACED IN THE DRAWING OR ANY OTHER DESIGN OR INVENTION, OR CONVENTION, OR RIGHTS OF INVENTION TO REPRODUCE OR IN ANY WAY BE RELATED THEREIN.

8220101

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INITIAL RELEASE CLASS A PER TDRR 10633				

REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
B. ^{SUPPLIER} SHALL CONFORM TO QUALITY ASSURANCE PROVISIONS AS SPECIFIED IN ND1015404, CLASS 3.

- C. EACH UNIT AND SHIPPING CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED PER ND1002019 WITH THE MANUFACTURER'S NAME AND SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS AND DATE OF MANUFACTURE.

2. INSPECTION AND ACCEPTANCE

- A. CONDUCTOR: SIZE 28 STRANDED WIRE. COPPER, SILVER PLATED, PER MIL-W-16878/4 TYPE E

- B. TENSILE STRENGTH: 735,000 PSI WHEN TESTED PER FEDERAL STANDARD 151 METHOD 211

- C. ELONGATION: 8 PERCENT MINIMUM WHEN TESTED PER FEDERAL STANDARD 151 METHOD 211

- D. CAPACITANCE WHEN TESTED PER MIL-C-17

- (1) CONDUCTOR TO CONDUCTOR: 21.0 PICO FARADS MAX PER FOOT

- (2) CONDUCTOR TO SHIELD: 35.0 PICO FARADS MAX PER FOOT

- E. DIELECTRIC CONSTANT: 2.5 MAX WHEN TESTED PER FED-STD-406 METHOD 4021 @60 CPS AND 77°F

- F. RESISTANCE DC: 0.069 OHMS MAXIMUM PER FOOT @25°C WHEN TESTED PER MIL-STD-202, METHOD 303.

- G. CONCENTRICITY, CONDUCTOR: THE MINIMUM THICKNESS OF THE INSULATION SHALL BE NOT LESS THAN 41 PER CENT OF THE DIFFERENCE BETWEEN THE MEASURED DIAMETER OVER THE INSULATION AND THE MEASURED DIAMETER OVER THE CONDUCTOR OR NOT LESS THAN 80 PER CENT OF THE MAXIMUM THICKNESS AT THAT CROSS SECTION.

- H. INSULATION PULL-OFF FORCE: 8 OUNCES MINIMUM.

- (1) TEST METHOD: A SIX(6) INCH LENGTH OF WIRE SHALL BE STRIPPED 1 - 1/2 INCHES ON EACH END. ONE END OF THE WIRE SHALL BE PASSED THROUGH A HOLE IN A METAL PLATE WHOSE DIAMETER IS 0.015 INCHES. THE END OF THE WIRE WHICH PASSES THROUGH THE PLATE SHALL THEN BE PULLED IN SUCH A MANNER AS TO MEASURE THE FORCE REQUIRED TO PULL THE WIRE THROUGH THE INSULATION.

- J. DIELECTRIC STRENGTH: 2.0 KILOVOLT MINIMUM WHEN TESTED PER MIL-W-16878/4, IMMERSSED IN WATER.

- K. INSULATION RESISTANCE: 5 MEGOHMS PER FOOT MINIMUM WHEN TESTED PER MIL-W-16878/4, IMMERSSED IN WATER.

- L. SERVED SHIELD: 90 PERCENT MINIMUM COVERAGE.

- (1) MATERIAL: #28 AWG COPPER WIRE, SILVER PLATED PER MIL-W-16878D (BARE CONDUCTOR), FLATTENED AND WHAPPED AROUND PRIMARY INSULATION. (14 SPIRAL WRAPS PER INCH)

- M. DRAIN WIRE: SIZE 28 STRANDED COPPER WIRE SILVER PLATED, PER MIL-W-16878/4 (BARE-CONDUCTOR)

- (1) DRAIN WIRE SHALL BE IN ELECTRICAL AND PHYSICAL CONTACT WITH THE SERVED SHIELD

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>[Signature]</i> 6-1-64		WIRE, SHIELDED, TEFLON, MULTICONDUCTOR		
CHECKED <i>[Signature]</i> 6-1-64		SPECIFICATION CONTROL DRAWING		
APPROVED <i>[Signature]</i> 6-1-64				
APPROVED <i>[Signature]</i> 6-1-64		CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED <i>[Signature]</i> 6-1-64		MIT	C	1010778
APPROVED <i>[Signature]</i> 6-1-64		DATE	SCALE	SHEET 1 OF 3

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITANCE VALUES ARE IN μ F
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
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DO NOT SCALE THIS DRAWING

MATERIAL

SEE NOTES

NEXT ASSY USED ON

APPLICATION

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT CONTRACT, THE UNITED STATES GOVERNMENT THEREBY DISCLAIMS ANY RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, PREPARED, OR IN ANY WAY SUPPORTED THE SAME NEITHER CONSTITUTES A WARRANTY, NOR IS IT TO BE USED BY IMPLICATION OR OTHERWISE IN ANY MANNER TO INFRINGE THE RIGHTS OF ANY OTHER PERSON IN CONNECTION OR CONFLICT WITH ANY RIGHTS OF PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

8420101

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INITIAL RELEASE CLASS A PER TDRR 10633				

3. DESIGN:

- A. MATERIAL: PRIMARY INSULATION AND JACKET SHALL BE CORONA-RESISTANT PTFE JACKET SHALL HAVE A 0.002 INCH THICK FEP OUTER LAYER
- B. VOLTAGE RATING: 600 V RMS PRIMARY INSULATION
250 V RMS JACKET
- C. TEMPERATURE RATING: 200°C. MAX
- D. FLAMMABILITY: 30 SECONDS MAXIMUM BURNING TIME FOR 3 INCHES MAXIMUM FLAME TRAVEL WHEN TESTED PER MIL-W-16878.
- E. INSULATION CUT THROUGH: SPECIMENS OF THE WIRE SHALL RESIST THE PENETRATION OF THE UNDERWRITERS LABORATORY STANDARD PENETRATION APPARATUS USING A METAL BLADE WITH A 90° ANGLE AND .005-INCH (±.0002) RADIUS EDGE AT THE POINT OF CONTACT. THE BLADE SHALL BE LOADED WITH 400 GRAMS AND SHALL BE APPLIED TO THE INSULATED WIRE FOR A PERIOD OF 24 HOURS WHILE MAINTAINED AT 50°C. DURING THIS PERIOD A POTENTIAL OF 500 VOLTS RMS SHALL BE APPLIED BETWEEN THE BLADE AND THE METAL CONDUCTOR OF THE SPECIMEN AND NO ELECTRICAL CONTINUITY SHALL OCCUR.
- F. STRAIGHTNESS: THE WIRE SHALL UNCOIL FREELY WITHOUT EXHIBITING A SET. A 30 INCH PIECE OF WIRE CUT FROM A SPOOL OR BARREL SHALL NOT RECOIL ITSELF INTO A 10 INCH DIAMETER CIRCLE.
- G. WORKMANSHIP: THE SURFACE OF THE FINISHED WIRE SHALL BE CLEAN, SMOOTH, FREE FROM FOREIGN RESIDUE, AND FREE FROM VISIBLE BLEMISHES. THERE SHALL BE NO IMPERFECTIONS WHICH INCREASE THE OVERALL DIAMETER SO AS TO EXCEED THE MAXIMUM SPECIFIED. THE INSULATION SHALL BE UNIFORM THROUGHOUT AND FREE FROM ANY DEFECTS SUCH AS INCLUSIONS, RADIAL CRACKS, PINHOLES, DISCOLORATION OF CONDUCTOR OR INSULATION WHICH MAY AFFECT ITS SERVICEABILITY OR REQUIRE SPECIAL HANDLING.
- H. SPLICES: THE WIRE SHALL BE STRIPPED 2 INCHES ON EITHER SIDE OF ANY SPLICE.
- J. TWIST LAY: 8 TO 14 TIMES THE TWISTED OUTSIDE DIAMETER.

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		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING
		MATERIAL
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APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>George P. [signature]</i>	6/1/64	WIRE, SHIELDED, TEFLON, MULTICONDUCTOR SPECIFICATION CONTROL DRAWING		
CHECKED <i>G. P. [signature]</i>	6-1-64			
APPROVED <i>G. P. [signature]</i>	6/1/64			
APPROVED <i>W. [signature]</i>	6/2/64			
APPROVED <i>G. P. [signature]</i>	6/1/64	CODE IDENT NO.	SIZE	DRAWING NO.
MSC			C	1010778
	DATE	SCALE	SHEET 2 OF 3	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY AND ANY OBLIGATION WHATSOEVER. THE FACT THAT THE GOVERNMENT MAY HAVE SUBMITTED INFORMATION, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY INDICIA OR OTHERWISE AS AN IMPLICIT OR EXPLICIT LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHT OR PERMISSION TO REPRODUCE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THEREIN.

8220101

REVISIONS

SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INITIAL RELEASE CLASS A PER TORR 10633				

DASH NO.	NO. OF CONDUCTORS	COLOR PRIMARY INSULATION	CONDUCTOR SIZE(NOM)	THICKNESS PRIMARY INSULATION (NOM)	DIAMETER OVER PRIMARY INSULATION	THICKNESS SERVED SHIELD (NOM)	DIAMETER OVER SERVED SHIELD (NOM)	THICKNESS JACKET	DIAMETER OVER JACKET	COLOR JACKET
- 1	1	GREEN	#28(7/36)	.01	.035±.002	.002	.054	.008±.001	.070 ± .004	CLEAR
- 2	2	BLUE BLACK	#28(7/36)	.01	.035±.002	.002	.074	.008±.001	.090 ± .006	CLEAR
- 3	3	WHITE RED BLUE	#28(7/36)	.01	.035±.002	.002	.092	.008±.001	.108 ± .006	CLEAR

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRA" <i>[Signature]</i> 6-1-64		WIRE, SHIELDED, TEFLON, MULTICONDUCTOR		
CHECKED <i>[Signature]</i> 6-1-64		SPECIFICATION CONTROL DRAWING		
APPROVED <i>[Signature]</i> 6-1-64		DRAWING NO. 1010778		
APPROVED <i>[Signature]</i> 6-1-64		CODE IDENT NO.	SIZE C	
APPROVED <i>[Signature]</i> 6-1-64		DATE	SCALE	SHEET 3 OF 3

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μ f
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING

MATERIAL

SEE NOTES

NEXT ASSY

USED ON

APPLICATION

REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 3.
- C. EACH SPOOL AND SHIPPING CONTAINER SHALL BE PERMANENTLY AND LEGIBLY MARKED WITH THE MANUFACTURER'S NAME OR SYMBOL, ITEM NAME, NASA DRAWING NUMBER AND REVISION LETTER, NET CONTENTS, AND DATE OF MANUFACTURE PER ND 1002019.

2. INSPECTION AND ACCEPTANCE:

- A. CONDUCTOR: SILVER-COATED COPPER PER MIL-W-22759, UNILAY STRANDING.
- B. WORKMANSHIP: THE WIRE SHALL BE CONSTRUCTED AND FINISHED IN A THOROUGHLY WORKMANLIKE MANNER. THE WIRE SHALL BE FREE FROM LUMPS, KINKS, AND ABRADED SURFACES.
- C. INDIVIDUAL STRANDS: THE INDIVIDUAL SILVER PLATED STRANDS OF THE FINISHED WIRE SHALL EXHIBIT NO AMOUNT OF ADHERANCE WHEN THE STRIPPED END OF THE CONDUCTOR IS ROTATED BETWEEN THE FOREFINGER AND THUMB AGAINST THE LAY.
- D. INSULATION: THE INSULATION ABOUT THE CONDUCTOR ON SHIELDED AND JACKETED CONSTRUCTION SHALL HAVE A WALL THICKNESS NO LESS THAN 60 PERCENT OF THE SPECIFIED MINIMUM THICKNESS, OF POLYTETRAFLUOROETHYLENE PLUS POLYIMIDE.

3. DESIGN:

- A. THE PRIMARY CONDUCTOR SHALL MEET THE REQUIREMENTS OF MIL-W-22759 AND MS 18104 EXCEPT AS MODIFIED HEREIN.
- B. VOLTAGE RATING: 600 V RMS.
- C. TEMPERATURE RATING: +200°C MAX, CONTINUOUS, AND 330°C FOR (1) ONE MINUTE MAX.
- D. CAPACITANCE: PER TABLE WHEN TESTED PER MIL-C-17.
- E. FLAMMABILITY: INSULATION SHALL NOT BURN FOR MORE THAN TWO (2) SECONDS AFTER REMOVAL OF FLAME WHEN TESTED PER MIL-W-22759.
- F. INSULATION CUT THROUGH: SPECIMENS OF THE WIRE SHALL RESIST THE PENETRATION OF THE UNDERWRITER LABORATORY STANDARD PENETRATION APPARATUS USING A METAL BLADE WITH A 90° ANGLE AND .003 INCH MAXIMUM RADIUS EDGE AT THE POINT OF CONTACT. THE BLADE SHALL BE LOADED WITH 750 GRAMS AND APPLIED TO THE INSULATED WIRE FOR A PERIOD OF 24 HOURS WHILE MAINTAINED AT 50°C. DURING THIS PERIOD 500 V RMS SHALL BE APPLIED BETWEEN THE BLADE AND THE METAL CONDUCTOR OF THE SPECIMEN AND NO ELECTRICAL CONTINUITY SHALL OCCUR.
- G. INSULATION PULL OFF FORCE: 12 OZ MIN. USING A SCOTT TESTER MODEL XL OR EQUIVALENT WITH A PLATE SUBSTITUTED FOR THE LOWER JAW.
- H. INSULATION: EXTRUDED POLYTETRAFLUOROETHYLENE WITH A POLYIMIDE DIP-COAT PER MS 18104.
- J. SHIELD:
 - (1) MATERIAL: COPPER PER QQ-W-343, SILVER PLATED
 - (2) COVERAGE: SHIELD SHALL PROVIDE 90% MINIMUM COVERAGE PER MIL-W-16878.
 - (3) CARRIERS: 16

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED
	J	REPLACES REV H WITH CHANGE PER TDRR 35491	FEB 68 JWL
	K	REVISION STATUS CHANGED	20 FEB 68 DL
	L	REVISION STATUS CHANGED	2 APR 68 TE
	M	REVISION STATUS CHANGED	30 APR 68 M.S. RW4

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
2 PLACE DECIMALS	3 PLACE DECIMALS	ANGLES	DRAWN A. ADDARIO JR.	DATE 9/12/64	WIRE ELECTRICAL EXTRUDED TFE INSULATION POLYIMIDE COATED
+	+	+	CHECKED A. MARTO	8/17/64	
-	-	-	APPROVAL Y.L. NEVIN	9/17/64	
DO NOT SCALE THIS DRAWING			CONTRACT		SPECIFICATION CONTROL DRAWING
MATERIAL			NASA APPROVAL J. BARNARD		
SEE NOTES			MIT APPROVAL W. KUPFER		SIZE CODE IDENT NO C 20230 1010789
APPROVAL			SCALE		SHEET 1 OF 6

REQUIREMENTS (CONTINUED)

- K. TAPE WRAP: A .001 INCH THICK POLYIMIDE TAPE SHALL BE PARALLEL WRAPPED AROUND THE CONDUCTOR OR CONDUCTORS OF ALL SHIELDED AND JACKETED CONSTRUCTION.
- L. JACKET: 0.009 INCH (NOM) POLYTETRAFLUOROETHYLENE WITH A 0.0007 INCH (NOM) POLYIMIDE DIP-COAT.
- M. DIELECTRIC STRENGTH (TANK TEST) WHEN TESTED AT 60 HZ PER MIL-W-22759 (SHIELDED WIRE SHALL BE TESTED DRY WITHOUT IMMERSION IN WATER): 3 KV
- N. INSULATION RESISTANCE WHEN TESTED PER MIL-W-22759: 50,000 MEGOHMS/ 1000 FT (MIN).

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
	J	REPLACES REV H WITH CHANGE PER TDRR 35491	7 FEB 68
	K	REVISION STATUS CHANGED	20 FEB 68
	L	REVISION STATUS CHANGED	2 APR 68
	M	REVISED PER TDRR 36113	30 APR 68

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
2 PLACE DECIMALS	3 PLACE DECIMALS	ANGLES	DRAWN <u>A. ADDARIO JR.</u> DATE <u>8/13/64</u>	WIRE ELECTRICAL EXTRUDED TFE INSULATION POLYIMIDE COATED	
+	+	+	CHECKED <u>A. MARTO</u> DATE <u>8/14/64</u>	SPECIFICATION CONTROL DRAWING	
-	-	-	APPROVAL <u>Y. L. NEVIN</u> DATE <u>8/17/64</u>		
DO NOT SCALE THIS DRAWING			CONTRACT		
MATERIAL SEE MATERIAL			NASA APPROVAL <u>J. BARNARD</u>	SIZE C	CODE IDENT NO. 80230
APPROVAL			MIT APPROVAL <u>W. KUPFER</u>	SCALE	1010789
					SHEET 2 OF 6

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
	J	REPLACES REV H WITH CHANGE PER TDRR 35491	7 FEB 68
	K	REVISED PER TDRR 35575	20 FEB 68
	L	REVISION STATUS CHANGED	2 APR 68
	M	REVISION STATUS CHANGED	30 APR 68

NASA DASH NO.	INDIVIDUAL CONDUCTORS PER MIL-W-22759 MS 18104 * ** LESS MARKING	APPROX AWG SIZE PER COND	NO. OF STRANDS	AWG STRAND SIZE	MAX COND DIA	RES/1000 FT AT 20°C MAX	PRIMARY INSULATION		NO. OF CONDS	WIRE LAY/ INCH	MAX DIA OVER TAPE WRAP INCHES
							O.D.	COLOR			
001	-24-4	24	19	36	.026	23.2	.043 ±.002	YELLOW	1	—	
002	-24-0	24		36	.026	23.2		BLACK	1	—	
003	-24-4	24		36	.026	23.2		YELLOW	2	.5±.2	
004	-24-2							RED			
	-24-4	24		36	.026	23.2		YELLOW	3	.5±.2	
005	-24-4						.043 ±.002	RED			
	-24-2							GREEN			
	-24-5	24		36	.026	23.2		YELLOW	4	.8±.2	
	-24-1							RED			
006	-22-4	22		34	.033	14.6	.050 ±.002	GREEN			
007	-22-0	22		34	.033	14.6		BROWN			
008	-22-4	22		34	.033	14.6		YELLOW	1	—	
	-22-2							BLACK	1	—	
009	-22-4	22		34	.033	14.6		YELLOW	2	.5±.2	
	-22-2						.043 ±.002	RED			
	-22-5							YELLOW	3	.5±.2	
010	-22-4	22		34	.033	14.6		RED			
	-22-2						.043 ±.002	GREEN	4	.8±.2	
	-22-5							YELLOW			
	-22-1							RED			
011	-24-4	24		36	.026	23.2	.043 ±.002	BROWN			
012	-24-4	24		36	.026	23.2		YELLOW	1	—	+.004
	-24-2							YELLOW	2	.5±.2	+.004
013	-24-4	24		36	.026	23.2		RED			
	-24-2						.080 ±.002	YELLOW	3	.5±.2	+.004
	-24-5							RED			
014	-16-4	16		29	.060	4.5	.039 ±.002	GREEN	1		
015	-26-4	26		38	.021	36.2		YELLOW			
	-26-2						.039 ±.002	RED	2	.5±.2	+.004
016	-26-4	26		38	.021	36.2		YELLOW	1	—	
	-26-2	26		38	.021	36.2		YELLOW	2	.5±.2	
017	-26-4							RED			
	-26-2	26		38	.021	36.2		YELLOW	3	.5±.2	
	-26-5						.039 ±.002	RED			
018	-26-4	26		38	.021	36.2		GREEN			
	-26-2						.039 ±.002	YELLOW			
	-26-5							RED	4	.8±.2	
	-26-1	26	19	38	.021	36.2		GREEN			
019	-26-4							BROWN			

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

2 PLACE 3 PLACE
DECIMALS DECIMALS ANGLES
+ + +
- - -

DO NOT SCALE THIS DRAWING

MATERIAL

SEE NOTES

APPROVAL

MIT
INSTRUMENTATION LAB
CAMBRIDGE MASS

DRAWN A. ADDARIO JR. DATE 8/1/68

CHECKED A. MARTO 8/1/68

APPROVAL Y.L. NEVIN 8/1/68

CONTRACT

NASA APPROVAL J. BARNARD

MIT APPROVAL W. KUPFER 8/6/68

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE ELECTRICAL
EXTRUDED TFE INSULATION
POLYIMIDE COATED

SPECIFICATION CONTROL DRAWING

SIZE CODE IDENT NO

C 80230

1010789

SCALE

SHEET 3 OF 6

D

C

B

A

NASA DASH NO.	SHIELD				JACKET		CAPACITANCE	
	AWG STRAND SIZE	PICKS PIN INCH	NO. OF ENDS	DIA OVER SHIELD ± .004	O.D. ± .005	COLOR	CONDUCTOR TO SHIELD (MAX) (μf/FT)	MUTUAL (MAX) (μf/FT)
001								—
002								—
003								31
004								34
005								37
006								—
007								—
009								31
009								34
010								37
011	38	19	4	.061	.085	YELLOW	55	—
012	36	18	4	.108	.132	YELLOW	55	31
013	36	11	6	.115	.139	YELLOW	60	34
014								
015	36	13	4	.100	.124	YELLOW	45	26
016	—	—	—	—	—	—	—	—
017	—	—	—	—	—	—	—	26
018	—	—	—	—	—	—	—	24
019	—	—	—	—	—	—	—	22

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	J	THIS SHEET ADDED PER TDRR 35491	7 FEB 68	JWL
	K	REVISION STATUS CHANGED	20 FEB 68	DL
	L	REVISION STATUS CHANGED	2 APR 68	T / JWL
	M	REVISION STATUS CHANGED	30 APR 68	RWH

J THIS SHEET ADDED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		M-I-T INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
2 PLACE	3 PLACE	DRAWN A. ADDARIO JR.	DATE 8/12/64	WIRE ELECTRICAL EXTRUDED TFE INSULATION POLYIMIDE COATED	
+	+	CHECKED A. MARTO	8/14/64		
—	—	APPROVAL Y. L. NEVIN	8/17/64		
DO NOT SCALE THIS DRAWING		CONTRACT		SPECIFICATION CONTROL DRAWING	
MATERIAL SEE NOTES		NASA APPROVAL J. BARNARD		SIZE C	CODE IDENT NO 80230
APPROVAL		MIT APPROVAL W. KUPFER 16/AUG 64		1010789	
SCALE				SHEET 4 OF 6	

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE APPROVED
	J	THIS SHEET ADDED PER TDRR 33491	7 FEB 68 JWL RWH
(P)	K	REVISED PER TDRR 35575	20 FEB 68 DL
(P)	L	REVISED PER TDRR 35995	2 APR 68 TE
	M	REVISION STATUS CHANGED	30 APR 68 M. J. RWH

NASA. DASH NO.	INDIVIDUAL CONDUCTORS PER MIL-W-22759 MS 18104** LESS MARKING	APPROX AWG SIZE PER COND	NO. OF STRANDS	AWG STRAND SIZE	MAX COND DIA	RES/ 1000FT AT 20°C MAX	PRIMARY INSULATION		NO. OF CONDS	WIRE LAY/ INCH	MAX DIA OVER TAPE WRAP INCHES
							O.D.	COLOR			
020	-26-2	26	19	38	.021	36.2	.039 ±.002	RED	1	—	
021	-26-3	26		38	.021	36.2		ORANGE	1	—	
022	-26-5	26		38	.021	36.2		GREEN	1	—	
023	-26-1	26		38	.021	36.2		BROWN	1	—	
024	-26-0	26	19	38	.021	36.2		BLACK	1	—	
025	-28-4	28	7	36	.016	62.5	.035 ±.002	YELLOW	1	—	
026	-28-3	28		36	.016	62.5		ORANGE	1	—	
027	-28-5	28		36	.016	62.5		GREEN	1	—	
028	-28-2	28		36	.016	62.5		RED	1	—	
029	-28-1	28		36	.016	62.5		BROWN	1	—	
030	-28-0	28	7	36	.016	62.5		BLACK	1	—	
031	-12-4	12	19	25	.093	1.81	.120 ±.004	YELLOW	1	—	
032	-26-4	26	19	38	.021	36.2	.039	YELLOW	3	.5±.2	+.004
	-26-2						±.002	RED			
	-26-5							GREEN			
-033	-22-4	22	19	34	.033	14.6	.050	YELLOW	2	.5±.2	+.004
	-22-2						±.002	RED			
034	-24-4	24	19	36	.026	23.2	.043	YELLOW	3	1.0±.25	+.004
	-24-2						±.002	RED			
	-24-5							GREEN			

J THIS SHEET ADDED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
2 PLACE DECIMALS	3 PLACE DECIMALS	ANGLES	DRAWN A. ADDARIO JR	DATE 8/13/67	WIRE ELECTRICAL EXTRUDED TFE INSULATION POLYIMIDE COATED
+	+	+	CHECKED A. MARTO	8/14/67	
-	-	-	APPROVAL Y. L. NEVIN	8/17/67	
DO NOT SCALE THIS DRAWING			CONTRACT		SPECIFICATION CONTROL DRAWING
MATERIAL SEE NOTES			NASA APPROVAL J. BARNARD		
APPROVAL			MIT APPROVAL W. KUPFER		SIZE C
					CODE IDENT NO 80230
					1010789
					SCALE
					SHEET 5 OF 6

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE
	J	THIS SHEET ADDED PER TDRR 35491	7 FEB 68
	K	REVISION STATUS CHANGED	20 FEB 68
	L	REVISED PER TDRR 35995	2 APR 68
	M	REVISION STATUS CHANGED	30 APR 68

NASA DASH NO.	SHIELD				JACKET		CAPACITANCE	
	AWG STRAND SIZE	PICKS PIN INCH	NO. OF ENDS	DIA OVER SHIELD ± .004	O.D. ± .005	COLOR	CONDUCTOR TO SHIELD (MAX) (μf/FT)	MUTUAL (MAX) (μf/FT)
020	--	--	--	--	--	--	--	--
021	--	--	--	--	--	--	--	--
022	--	--	--	--	--	--	--	--
023	--	--	--	--	--	--	--	--
024	--	--	--	--	--	--	--	--
025	--	--	--	--	--	--	--	--
026	--	--	--	--	--	--	--	--
027	--	--	--	--	--	--	--	--
028	--	--	--	--	--	--	--	--
029	--	--	--	--	--	--	--	--
030	--	--	--	--	--	--	--	--
031	--	--	--	--	--	--	--	--
032	36	14	5	.105	.129	YELLOW	43	24
033	36	10	5	.122	.146	YELLOW	56	31
034	36	11	6	.115	.139	BLACK	60	34

J THIS SHEET ADDED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
2 PLACE 3 PLACE DECIMALS DECIMALS ANGLES + + + - - -		DRAWN A. ADDARIO JR. DATE 8/13/67 CHECKED A. MARTO 8/14/67 APPROVAL Y. L. NEVIN 8/17/67		WIRE ELECTRICAL EXTRUDED TFE INSULATION POLYIMIDE COATED	
DO NOT SCALE THIS DRAWING		CONTRACT		SPECIFICATION CONTROL DRAWING	
MATERIAL SEE NOTES		NASA APPROVAL J. BARNARD		SIZE C	CODE IDENT NO. 80230
APPROVAL		MIT APPROVAL W. KUPFER 10 AUG 68		SCALE	SHEET 6 OF 6

M 1010789

B

A

NOTICE - WHEN SUBMITTING DRAWINGS, SPECIFICATIONS, OR OTHER DATA TO THE UNITED STATES GOVERNMENT, THE DRAWING DATA SHOULD BE SUBMITTED IN CONJUNCTION WITH A REPRODUCIBLE COPY OF THE DRAWING DATA. THE UNITED STATES GOVERNMENT WILL NOT BE RESPONSIBLE FOR THE LOSS OF OR DAMAGE TO ANY DRAWING DATA. THE UNITED STATES GOVERNMENT WILL NOT BE RESPONSIBLE FOR THE LOSS OF OR DAMAGE TO ANY DRAWING DATA. THE UNITED STATES GOVERNMENT WILL NOT BE RESPONSIBLE FOR THE LOSS OF OR DAMAGE TO ANY DRAWING DATA.

NOTES:

1. GENERAL REQUIREMENTS:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- UNITS SHALL BE CAPABLE OF MEETING THE QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002052 WHEN TESTED IN CONJUNCTION WITH PIN CONTACT 1010738 SEE NOTES 2.D AND 3.B.
- MARKING: PARTS AND INTERNAL AND EXTERNAL PACKAGES SHALL BE PERMANENTLY AND LEGIBLY MARKED, PER ND 1002019, WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, DATE OF MANUFACTURE OR DATE CODE, AND THE NASA PART NUMBER (DRAWING NUMBER AND REVISION LETTER). THE MANUFACTURER'S PART NUMBER MAY APPEAR ON PACKAGES.
- QUALITY ASSURANCE: PER ND 1015404 CLASS 2.

METAL INSERT: CORROSION-RESISTANT STEEL PER QQ-S-763, CLASS 303 OR 303SE, CONDITION A OR B.

RETAINING RING: MS 16632-28

(2) FINISH:

POLARIZING BOSS: GREY ANODIZE PER MIL-A-8625, TYPE 1.
METAL INSERT: PASSIVATE PER MIL-F-14072, E300

2. ACCEPTANCE AND INSPECTION REQUIREMENTS:

- CERTIFICATION: CONFORMANCE WITH MATERIAL AND FINISH REQUIREMENT SHALL BE CERTIFIED WITH EACH SHIPMENT.
- DIMENSIONS: AS DELINEATED
- MARKING: AS REQUIRED IN NOTE 1.C ABOVE.
- ELECTRICAL CHARACTERISTICS (WHEN 1010738 CONTACTS ARE ASSEMBLED)
 - INSULATIVE RESISTANCE (TEST PER MIL-STD-202, METHOD 302, CONDITION C) 2000 MEGOHMS MINIMUM AT 150°F BETWEEN THE MOUNTING HARDWARE AND ANY CONTACT OR BETWEEN ANY TWO ADJACENT CONTACTS.
 - DIELECTRIC WITHSTANDING VOLTAGE (TEST PER MIL-STD-202, METHOD 301) SEA LEVEL - 1500 VRMS
90,000 TO 130,000 FEET - 250 VRMS
THERE SHALL BE NO BREAKDOWN OR FLASHOVER BETWEEN THE MOUNTING HARDWARE AND ANY CONTACT OR BETWEEN ANY TWO ADJACENT CONTACTS.
- PIN IDENTIFICATION SHALL BE MARKED BY RAISED MOLDED CHARACTERS.

3. DESIGN REQUIREMENTS:

A. VOLTAGE DESIGN RATINGS:

ALTITUDE	VOLTS DC	VOLTS RMS (SINUSOIDAL)
SEA LEVEL	490	350
10,000 FT.	390	280
60,000 FT.	140	100

- CONTACT RETENTION FORCE: 15 POUNDS MINIMUM AXIAL LOAD WITHOUT DAMAGE TO PROPERLY INSTALLED CONTACTS APPLIED IN EITHER DIRECTION. APPLY LOAD AT ONE POUND PER SECOND RATE.

C. MATING CONNECTOR: 1010818

D. CONSTRUCTION:

(1) MATERIAL:

BODY SPACER: DIALLYL PHTHALATE PER MIL-M-14, TYPE SDG-F, TAN COLOR

POLARIZING BOSS: 7075-T6 ALUMINUM ALLOY PER QQ-A-277.

PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING MATERIAL SEE NOTE HEAT TREATMENT FINAL FINISH NEXT ASSY USED ON APPLICATION SEE NOTES
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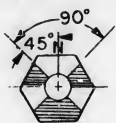
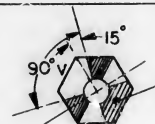
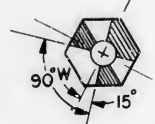
QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN S.T. Galt DATE 12/20/68 CHECKED J.C. Galt DATE 12/20/68 APPROVAL J.C. Galt DATE 12/20/68 APPROVAL J.C. Galt DATE 12/20/68		CONNECTOR, PLUG, ELECTRICAL (244 PIN BODY) SPECIFICATION CONTROL DRAWING	
NASA APPROVAL J.C. Galt DATE 12/20/68 MIT APPROVAL J.C. Galt DATE 12/20/68 MIT APPROVAL J.C. Galt DATE 12/20/68		CODE IDENT NO. SIZE C	NASA DRAWING NO. 1010817
SCALE NONE		WT	SHEET 1 OF 2

NOTICE - THIS DRAWING IS A COPY OF THE ORIGINAL DRAWING. IT IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ORIGINALLY PREPARED. THE UNITED STATES GOVERNMENT IS NOT RESPONSIBLE FOR ANY REPRODUCTION OR FOR THE RESULTS OF ANY REPRODUCTION. THE FACT THAT THE GOVERNMENT HAS REPRODUCED THIS DRAWING DOES NOT CONSTITUTE AN ENDORSEMENT OR A GUARANTEE OF THE ACCURACY OF THE INFORMATION CONTAINED HEREIN. THE GOVERNMENT MAKES NO WARRANTY, EXPRESS OR IMPLIED, FOR THE USE OF THE INFORMATION CONTAINED HEREIN FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS ORIGINALLY PREPARED. THE GOVERNMENT SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING ATTORNEY'S FEES, ARISING OUT OF OR IN CONNECTION WITH THE USE OF THE INFORMATION CONTAINED HEREIN.

1180101

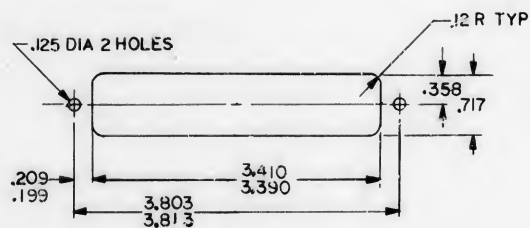
REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
---	INITIAL RELEASE CLASS A PER DRR 13240	10-6-64	Wk

VIEWED FROM MATING FACE

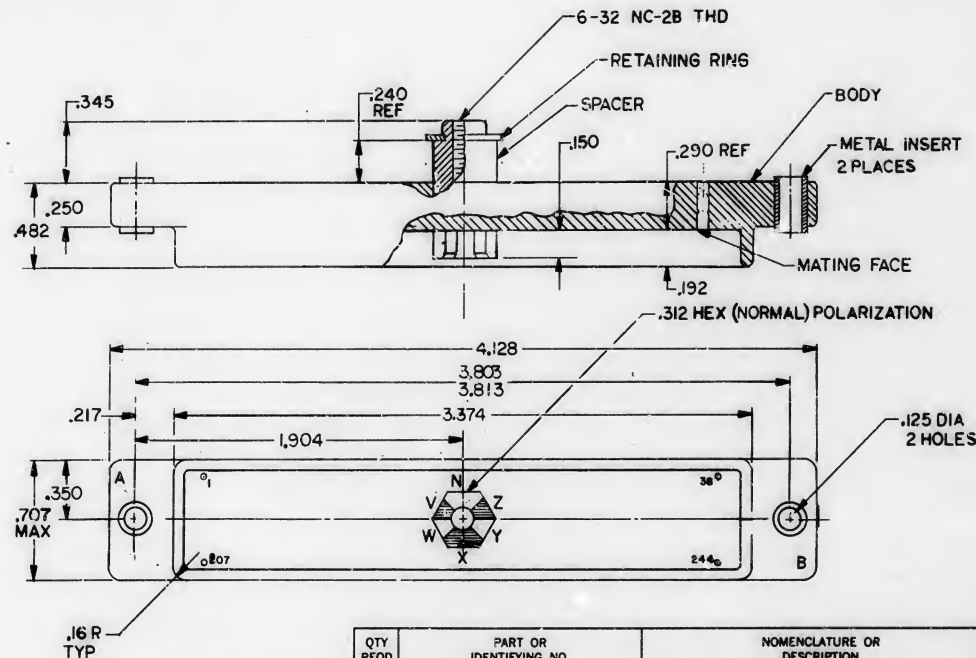
NASA PART NUMBER	POLARIZING CHART
1010817-1	A 
1010817-2	A 
1010817-3	A 

THIS LETTER FOR END IDENT. ONLY
TYP

HIGH POINTS OF
POLARIZING BOSS
SHADED



RECOMMENDED MOUNTING HOLE CUTOUT



QTY REQ		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FIND NO.	
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN BY: S.T. Oshin				DATE: 12 MAR 64			
CHECKED BY: J.P. Gaudet				DATE: 17 MAR 64			
APPROVAL BY: E.E. Hall				DATE: 5 OCT 64			
NASA APPROVAL: W.J. Rine				DATE: 10-6-68			
MIT APPROVAL: W.J. Rine				DATE: 10-6-68			
MIT APPROVAL: W.J. Rine				DATE: 10-6-68			
NEXT ASSY		USED ON		SCALE NONE		SHEET 2 OF 2	
APPLICATION		SEE NOTE		CODE IDENT NO. C		SIZE	
				SCALE NONE		WT	
				SCALE NONE		WT	

CONNECTOR, PLUG, ELECTRICAL
(244 PIN BODY)
SPECIFICATION CONTROL DRAWING

1010817

8180101

1

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A SPECIFICALLY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR INCURRED THE COST OF THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSE THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

REQUIREMENTS:

1. GENERAL:

- A. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN NASA DOCUMENT ND 1015404, CLASS 2.
- C. UNITS SHALL BE CAPABLE OF MEETING ALL QUALIFICATION REQUIREMENTS SPECIFIED IN ND 1002052.
- D. CONNECTOR IS DESIGNED TO UTILIZE PIN CONTACTS PER 1010738

2. INSPECTION AND ACCEPTANCE:

A. MECHANICAL REQUIREMENTS:

(1) MATERIAL:

(a) BODY AND DIALLYLPHTHALATE PER MIL-M-14, TYPE SDG-F OFF WHITE TO TAN COLOR

(b) HARDWARE:

SPACER: DIALLYLPHTHALATE PER MIL-M-14 TYPE SDG-F.
GUIDE PIN AND METAL INSERT: CORROSION RESISTANT STEEL, CLASS 303 OR 303 Se CONDITION A OR B PER QQ-S-763 EQUIVALENT OR BETTER, PASSIVATED PER MIL-S-5002 EQUIVALENT OR BETTER.

JACKSCREW LUBRICATED
POLARIZING BOSS: ALUMINUM ALLOY GRADE 7075T6 PER QQ-A-277-1 GRAY ANODIZE PER MIL-A-8625 TYPE I.
RETAINING RING: MS16632-28 PER MIL-R-21248.

(2) DIMENSIONS PER DRAWING.

(3) MARKING: UNITS SHALL BE MARKED IN ACCORDANCE WITH ND 1002019 WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, NASA DRAWING NUMBER, DASH NUMBER AND REVISION LETTER, THE MANUFACTURER'S LOT OR SERIAL NUMBER TRACEABLE TO DATE OF MANUFACTURE. MANUFACTURER'S PART NUMBER MAY APPEAR ON THE PART OR PACKAGE.

B. ELECTRICAL REQUIREMENTS: (CONTACTS INSTALLED)

- (1) INSULATION RESISTANCE: 2000 MEGOHMS MINIMUM AT 150°F MEASURED BETWEEN ANY TWO ADJACENT CONTACTS AND BETWEEN THE SHELL OR HARDWARE AND ANY ADJACENT CONTACT.
- (2) DIELECTRIC STRENGTH: SEA LEVEL - NO EVIDENCE OF BREAKDOWN OR FLASHOVER WHEN TESTED AT 1500 VRMS. 90,000 TO 130,000 FT. - NO EVIDENCE OF BREAKDOWN OR FLASHOVER WHEN 250 VRMS APPLIED BETWEEN ANY PAIR OF CONTACTS AND BETWEEN THE HARDWARE AND ANY CONTACT.
- (3) VOLTAGE RATINGS:

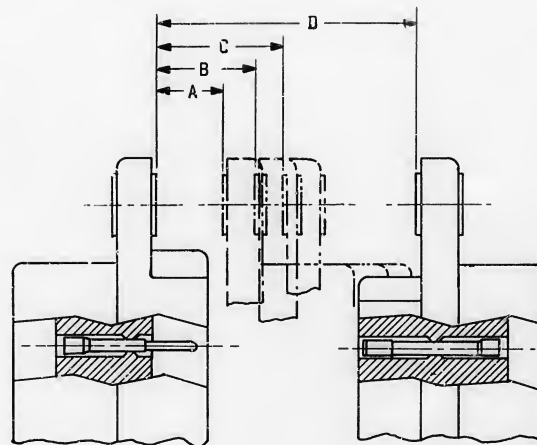
	VOLTS DC	VOLTS AC RMS
SEA LEVEL	490	350
10,000 FT	390	280
60,000 FT	140	100

WITHSTANDING VOLTAGE (SEA LEVEL) 1500 VOLTS
RMS 60 CPS WITHOUT FLASHOVER.

DESIGN REQUIREMENTS:

1. POLARIZATION BOSS SHOWN IN "N" POSITION.
2. WHEN MATED AT NINE TO TEN INCH-POUNDS TORQUE USING THE APPLICABLE INTERFACIAL SEAL PER DRAWING 1010812, THE INDIVIDUAL CONTACTS SHALL BE ENVIRONMENTALLY SEALED WITH PERFORMANCE AS SPECIFIED HEREIN.
3. MATES WITH 1010824
PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING

	JACKSCREW	RACK & PANEL HARDWARE
A (FULLY ENGAGED)	.216 ±.012	.216 ±.012
B (PIN DISENGAGED)	.338 ±.038	.338 ±.038
C (HEX DISENGAGED)	.482 ±.012	.482 ±.012
D (FULLY DISENGAGED)	.1007 ±.036	.768 ±.038



FOR ENGINEERING REFERENCE ONLY

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDR	12-7-89	WLC
A	REVISED PER TDR 13336	14 OCT 89	WLC
B	REVISED PER TDR 13960	11-12-64	WLC
C	REVISED PER TDR 14639	11-9-64	WLC

TABLE 1

DASH NO.	FIG NO.	POLARIZING POSITION
1	1	90° 15° B108
2	2	90° 15° B108
3	1	90° 15° B108
4	1	90° 45° B108
5	1	85° 12.5° B108
6	1	85° 12.5° B108

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS Contract NAS 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY: Bender 15-SEP-64 CHECKED BY: Ed Foster 18-SEP-64 APPROVAL: J. J. [Signature] 9/23/64		CONNECTOR, PLUG, ELECTRICAL 108 PIN CONTACTS (NO. 22)	
SEE REQUIREMENTS		SPECIFICATION CONTROL DRAWING	
HEAT TREATMENT NONE		CODE IDENT NO. SIZE C	
NEXT ASSY USED ON		NASA DRAWING NO. 1010825	
APPLICATION NONE		SHEET 1 OF 2	

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1010825

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
-	INITIAL RELEASE CLASS A PER TDRR 12789	4-29-64	WKC
A	REVISED PER TDRR 13336	12/14/64	WKC
B	REVISED PER TDRR 13960	11-12-64	WKC
C	REVISED PER TDRR 14639	12-8-64	WKC

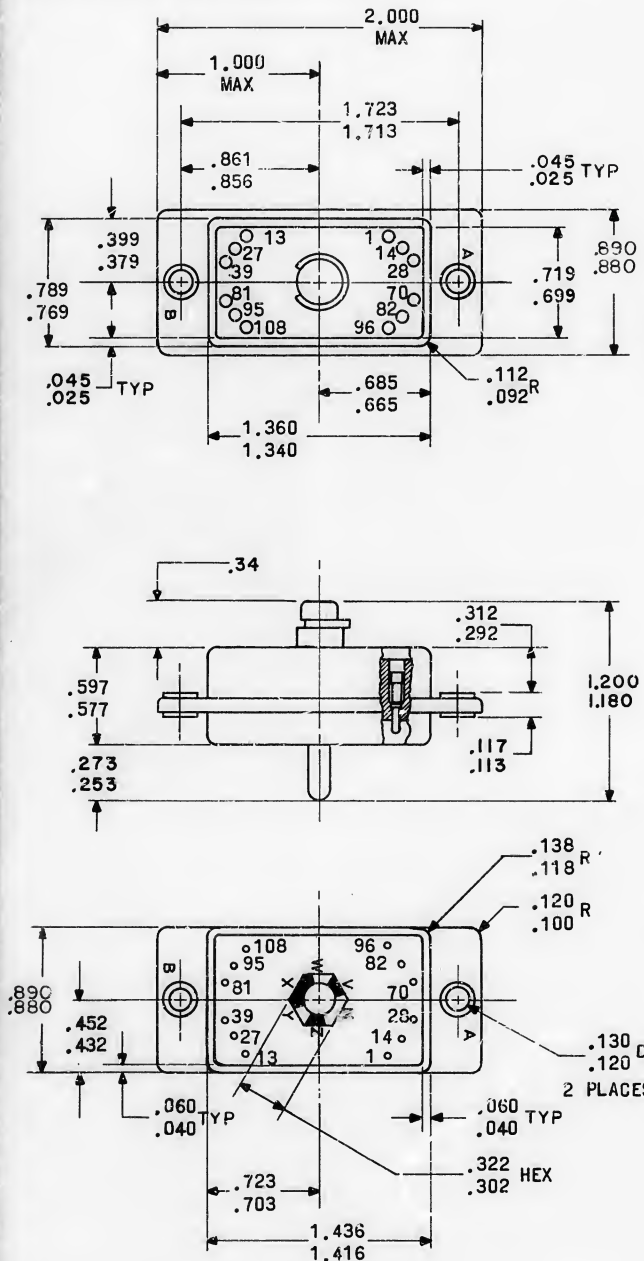


FIG. 2

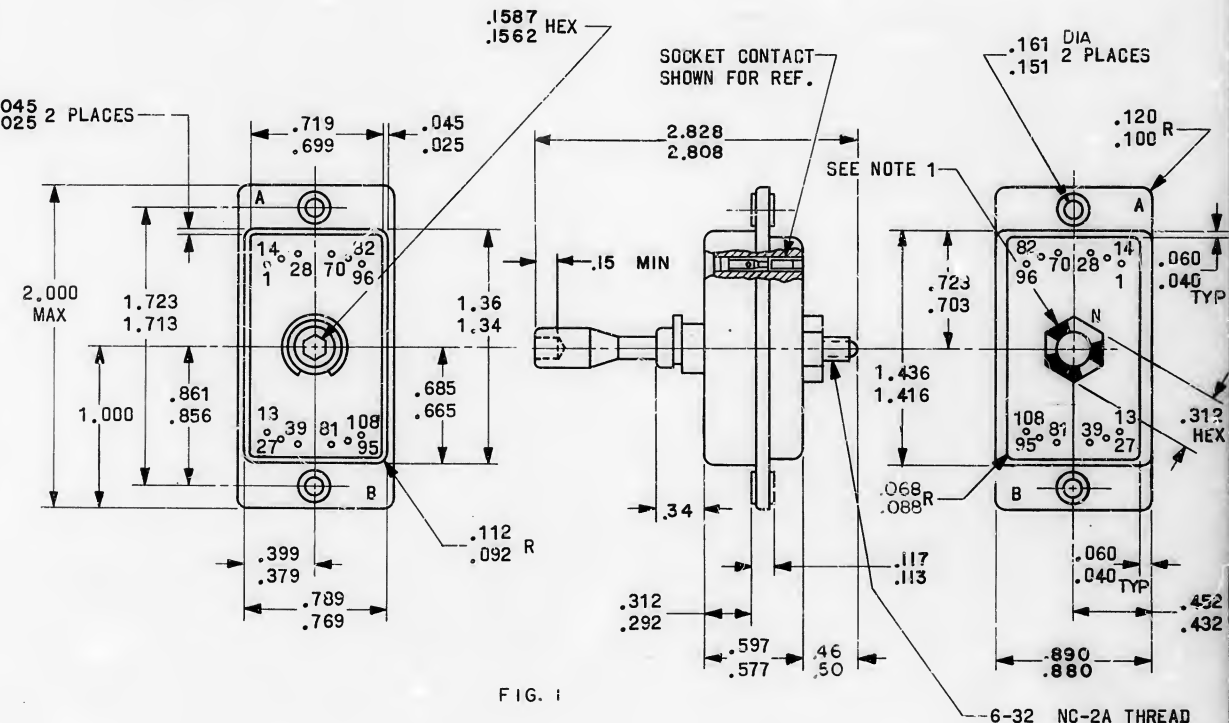
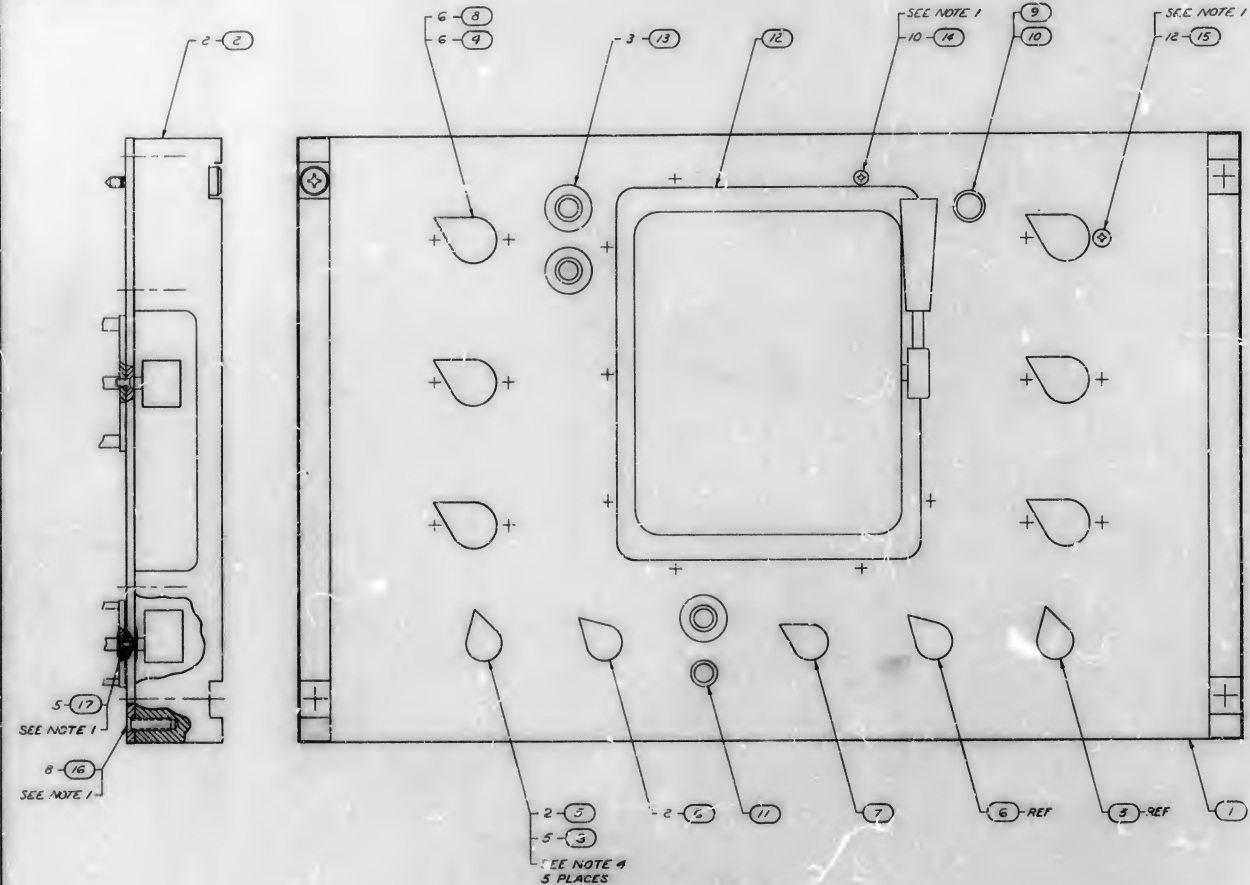


FIG. 1

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
M.I.T. INSTRUMENTATION LAB CAMBRIDGE, MASS Contract NAS 9-497		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Bender</i> 16 SEP-64 CHECKED <i>Ed Foster</i> 18 SEP-64 APPROVAL <i>J. J. Kline</i> 9/24/64		CONNECTOR, PLUG, ELECTRICAL 108 PIN CONTACTS (NO. 22) SPECIFICATION CONTROL DRAWING	
NASA APPROVAL <i>W. J. R. Kline</i> MIT APPROVAL <i>W. J. R. Kline</i> 22 Sep 64		CODE IDENT NO. C SCALE	SIZE NASA DRAWING NO. 1010825 SHEET 2 OF 2

1. THIS DRAWING IS THE PROPERTY OF THE U.S. AIR FORCE AND IS LOANED TO YOUR ORGANIZATION FOR YOUR INFORMATION ONLY. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE U.S. AIR FORCE. 2. THIS DRAWING IS THE PROPERTY OF THE U.S. AIR FORCE AND IS LOANED TO YOUR ORGANIZATION FOR YOUR INFORMATION ONLY. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE U.S. AIR FORCE. 3. THIS DRAWING IS THE PROPERTY OF THE U.S. AIR FORCE AND IS LOANED TO YOUR ORGANIZATION FOR YOUR INFORMATION ONLY. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE U.S. AIR FORCE.



- NOTES
1. ASSEMBLE FIND NO. 18/216 817 USING FIND NO. 18
 2. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
 3. FOR SYMBOLS, FABRICATION AND REQUIRED TESTS SEE NDI000012
 4. DISCARD NTC SCREWS SUPPLIED BY MFG
 5. AR DENOTES AS REQUIRED

341 512 Z
EXP STATUS
OF SHEETS

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
NEXT ASSY
USED FOR
FINISH

1014156

APPLICABLE

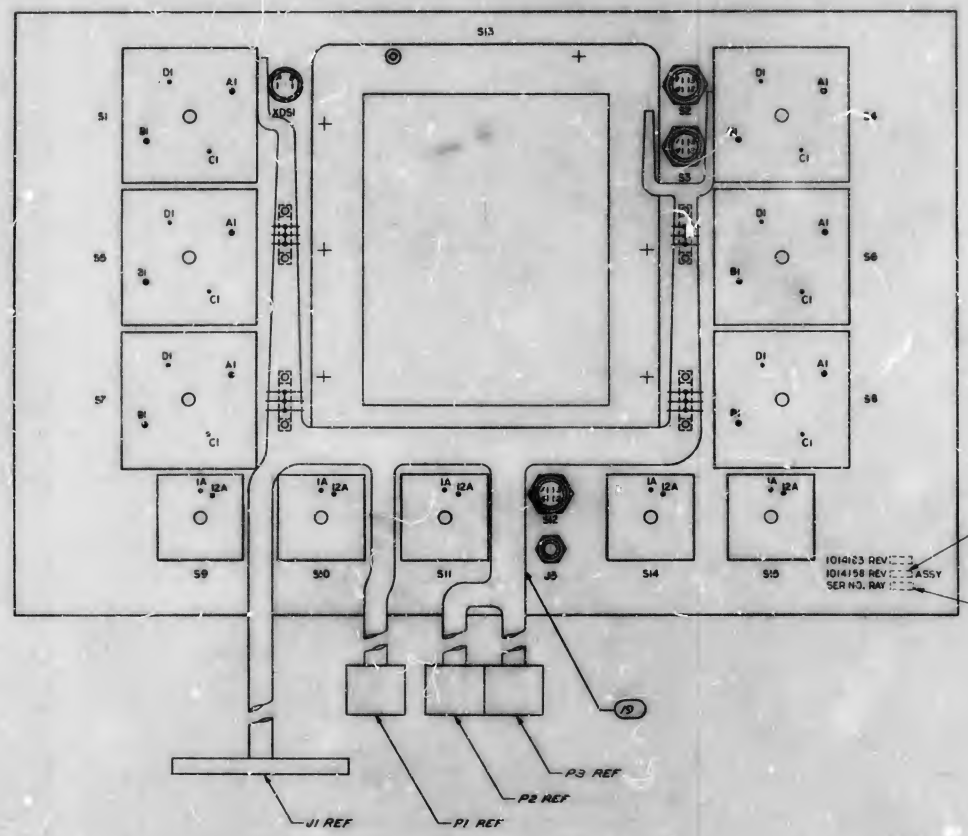
FOR INFORMATION ONLY
CLASS B RELEASE PER DTRR NO. 01938 DATE 10 July 23

REVISIONS			DATE	APPROVED
SYM	DESCRIPTION			
1	CLASS B RELEASE PER DTRR			
2	CHANGED PER DTRR 03774			
3	CHANGED PER DTRR 03774			
4	CHANGED PER DTRR 03774			
5	CHANGED PER DTRR 03774			
6	CHANGED PER DTRR 03774			
7	CHANGED PER DTRR 03774			
8	CHANGED PER DTRR 03774			
9	CHANGED PER DTRR 03774			
10	CHANGED PER DTRR 03774			
11	CHANGED PER DTRR 03774			
12	CHANGED PER DTRR 03774			
13	CHANGED PER DTRR 03774			
14	CHANGED PER DTRR 03774			
15	CHANGED PER DTRR 03774			
16	CHANGED PER DTRR 03774			
17	CHANGED PER DTRR 03774			
18	CHANGED PER DTRR 03774			
19	CHANGED PER DTRR 03774			
20	CHANGED PER DTRR 03774			

QTY	REQ	IDENTIFYING NO	DESCRIPTION	FIND NO
1		1014442	LEAD ELECTRICAL	20
1		1014201	WIRING HARNESS	19
AR		MIL-S-40083 CL 31	SCALING COMPOUND	18
5		M551022-22	SCREW	17
8		M53500-45	SCREW, MACH, FLAT HD	16
12		M53500-40	SCREW, MACH, FLAT HD	15
10		M53500-27	SCREW, MACH, FLAT HD	14
3		M525009-3C	SWITCH, PUSH	13
1		1006913	SWITCH, CARD READING	12
1		M53529-10994	CONN, RECP	11
1		1006919-2	LAMP, INCANDESCENT	10
1		1006919-2	LIGHT, INDICATOR	9
6		1006919-2	SWITCH, ROTARY	8
1		1006919-5	SWITCH, ROTARY	7
2		1006919-4	SWITCH, ROTARY	6
2		1006919-3	SWITCH, ROTARY	5
6		M5391528-2K20	KNOB, PRINTER	4
5		M5391528-1K20	KNOB, PRINTER	3
2		1014215-6	HANDLE, ASSY	2
1		1014183	PANEL, FRONT	1

QTY	REQ	IDENTIFYING NO	DESCRIPTION	FIND NO
1		1014156	FRONT PANEL ASSEMBLY	1

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED
1	THIS SHEET ADDED CLASS B	1/16/74	WJ
2	RELEASED PER TDOR 03994 CDR		
3	CLASS B CHANGE PER 2038338	3-27-74	JFB
4	OR APPROVED CHANGE 14-11-1974		



FOR INFORMATION ONLY
CLASS B RELEASE PER TDOR NO. 03994 DATE

MARK APPLICABLE REV
SYM SEE NOTE 6

1014123 REV 1
1014158 REV 1 ASSY
SER NO. RAY

MARK APPLICABLE SER NO
SEE NOTE 6

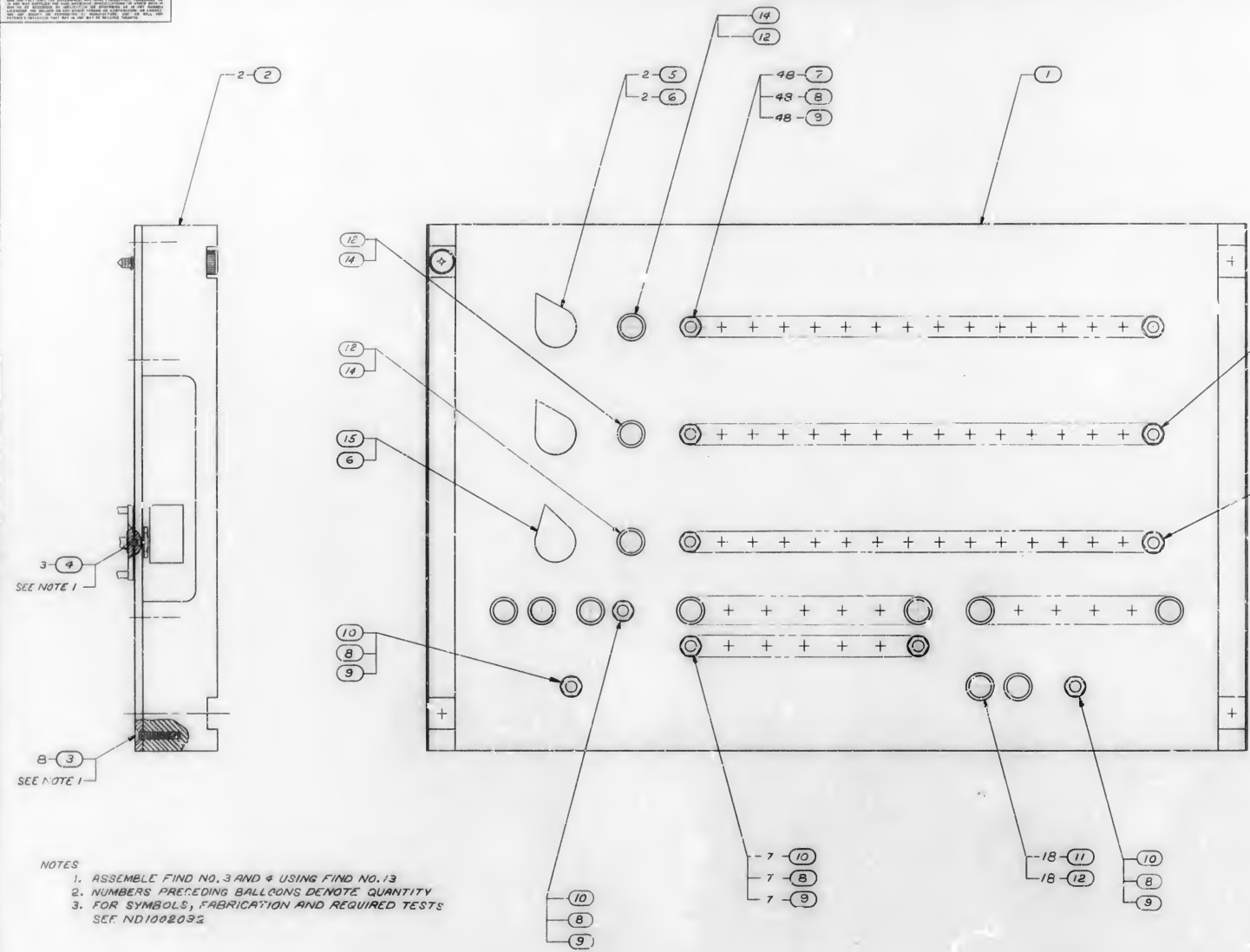
Ⓐ THIS SHEET ADDED

QTY	PART OR SUBSTITUTION NO	NOMENCLATURE OR DESCRIPTION	SYNO NO																																																																												
1	1014158	FRONT PANEL ASSEMBLY LOGIC DRAWER NO. 1																																																																													
<table border="1"> <tr> <td>UNLESS OTHERWISE SPECIFIED</td><td>BY THEISSON CO</td><td>MANNED SPACECRAFT CENTER</td><td></td></tr> <tr> <td>DIMENSIONS ARE IN INCHES</td><td>1/16" TYPICAL</td><td>HOUSTON, TEXAS</td><td></td></tr> <tr> <td>TOLERANCES ARE</td><td></td><td></td><td></td></tr> <tr> <td>FRACTIONS DECIMALS AND</td><td></td><td></td><td></td></tr> <tr> <td>DO NOT SCALE THIS DRAWING</td><td></td><td></td><td></td></tr> <tr> <td>MATERIAL</td><td></td><td></td><td></td></tr> <tr> <td>HEAT TREATMENT</td><td></td><td></td><td></td></tr> <tr> <td>FINISH</td><td></td><td></td><td></td></tr> <tr> <td>WARRANTY</td><td></td><td></td><td></td></tr> <tr> <td>REVISIONS</td><td></td><td></td><td></td></tr> <tr> <td>APPROVAL</td><td></td><td></td><td></td></tr> <tr> <td>DESIGNER</td><td></td><td></td><td></td></tr> <tr> <td>CHECKER</td><td></td><td></td><td></td></tr> <tr> <td>APPROVER</td><td></td><td></td><td></td></tr> <tr> <td>DATE</td><td></td><td></td><td></td></tr> <tr> <td>BY</td><td></td><td></td><td></td></tr> <tr> <td>FOR</td><td></td><td></td><td></td></tr> <tr> <td>SCALE</td><td></td><td></td><td></td></tr> <tr> <td>SHEET</td><td></td><td></td><td></td></tr> </table>				UNLESS OTHERWISE SPECIFIED	BY THEISSON CO	MANNED SPACECRAFT CENTER		DIMENSIONS ARE IN INCHES	1/16" TYPICAL	HOUSTON, TEXAS		TOLERANCES ARE				FRACTIONS DECIMALS AND				DO NOT SCALE THIS DRAWING				MATERIAL				HEAT TREATMENT				FINISH				WARRANTY				REVISIONS				APPROVAL				DESIGNER				CHECKER				APPROVER				DATE				BY				FOR				SCALE				SHEET			
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SHEET																																																																															

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE

LIST OF MATERIALS			
MANNED SPACECRAFT CENTER			
HOUSTON TEXAS			
FRONT PANEL ASSEMBLY			
LOGIC DRAWER NO. 1			
CODE IDENT NO	SIZE	NASA DRAWING NO	
F		1014158	
SCALE 1/1	WT	SHEET	OF 2

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. DIMENSIONS ARE TO BE TAKEN FROM THE CENTER OF THE PART UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE TO BE TAKEN FROM THE CENTER OF THE PART UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE TO BE TAKEN FROM THE CENTER OF THE PART UNLESS OTHERWISE SPECIFIED.



NOTES
 1. ASSEMBLE FIND NO. 3 AND 4 USING FIND NO. 13
 2. NUMBERS PRECEDING BALLCONS DENOTE QUANTITY
 3. FOR SYMBOLS, FABRICATION AND REQUIRED TESTS
 SEE ND1002032

REVISIONS			
BY	DESCRIPTION	DATE	APPROVED
1	CLASS B RELEASED PER TDR NO. 0414	4/6/64	
2	CHANGED PER TDR 03914	4/6/64	
3	CHANGED PER TDR 04145	4/6/64	
4	CHANGED PER TDR 04145	4/6/64	

FOR INFORMATION ONLY
 CLASS B "RELEASE TDR NO. 04145 DATE 4/6/64"

QTY	REV	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	FIND NO
1		MS2520C	CLAMP, CABLE	12
1		1014294	HARNES	16
1		1006895-1	SWITCH, ROTARY	15
3		1006919-5	LIGHT, INDICATOR	14
1/4		MS-S-400B3 CLASS 31	SEALING COMPOUND	13
21		MS25237 TRA 345	LAMP	12
18		1016919-3	LIGHT, INDICATOR	11
10		MS24636-22	SWITCH, TOGGLE	10
58		MS33333-40	WASHER, LOCK	9
58		1006917-3	NUT, ADAPTER	8
48		MS24655-21	SWITCH, TOGGLE	7
3		MS9152B-2P2B	KNOB, POINTER	6
3		1006895-2	SWITCH, ROTARY	5
3		MS51022-22	SCREW, SET	4
8		MS33200-40	SCREW, MACH	3
2		1014215-6	HANDLE	2
1		1014184	PANEL, FRONT	1

B 6
 A
 SH 1 SH 2
 REV STATUS
 OF SHEETS

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. DIMENSIONS ARE TO BE TAKEN FROM THE CENTER OF THE PART UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE TO BE TAKEN FROM THE CENTER OF THE PART UNLESS OTHERWISE SPECIFIED.		RAYTHEON CO. MANNED SPACECRAFT CENTER HOUSTON TEXAS	
1014125		FRONT PANEL ASSEMBLY LOGIC DRAWER NO. 2	
NEXT ASSY		NASA APPROVAL	
USED ON		MIL APPROVAL	
APPLICATION		MIL APPROVAL	
HEAT TREATMENT		COOL DOWN NO	
FINISH		NANA DRAWING NO	
SCALE		F	
DATE		1014159	
SHEET 1 OF 2		SHEET 1 OF 2	

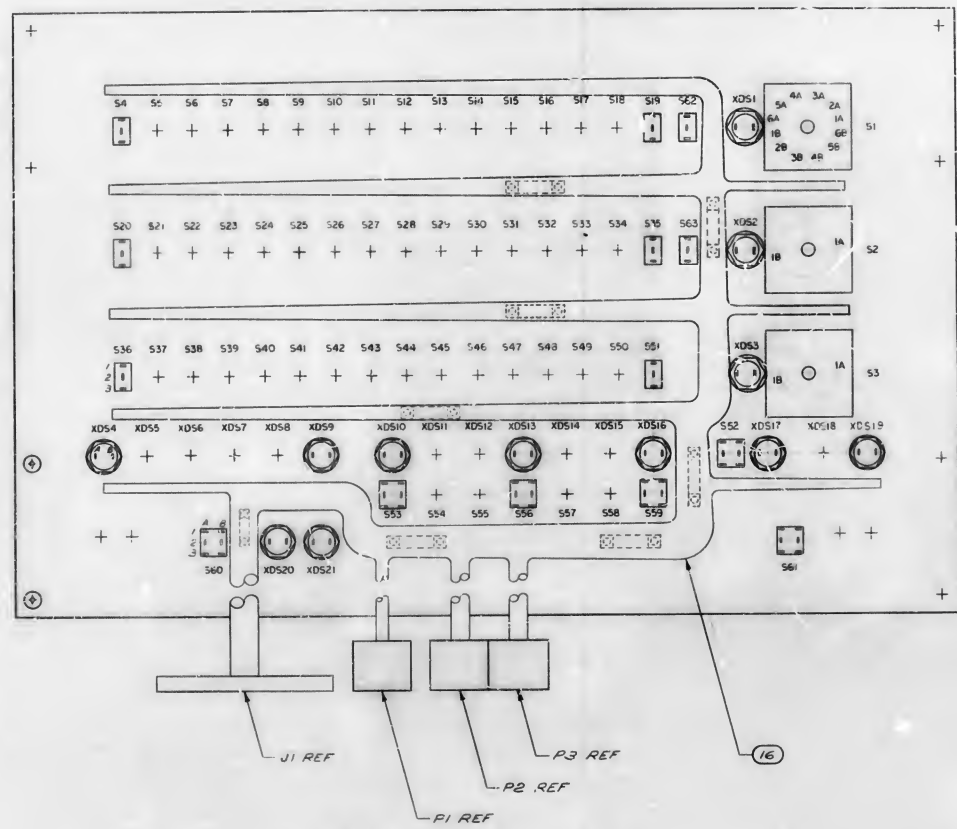


⑧ THIS SHEET ADDED

QTY		L'ST'ING OR DESCRIPTION		NOMENCLATURE OR DESCRIPTION		UNIT	
LIST OF MATERIALS							
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS & ANGLES 2 DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT FINISH				DRAWN BY <u>RAYTHEON CO.</u> <u>LEWISTOWN, MARIETTA</u> <u>GEORGIA</u> <u>NAVJAG 9-498</u> DRAWN BY <u>DATE</u> <u>CHECKED BY</u> <u>APPROVED BY</u> <u>APPROVED BY</u> NASA APPROVAL <u>DATE</u> NBT APPROVAL <u>DATE</u> NBT APPROVAL <u>DATE</u>			
NEXT REVISION		USED ON		CODE IDENT NO		SIZE	
APPLICATION		FINAL		NASA DRAWING NO		1014159	
SHEET 2 OF 2				SHEET 2 OF 2			

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REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
B	THIS SHEET ADDED FOR TORR 04145	1-1-73	
C	CLASS II CHANGE PER RD R5G88A OR IN BULL CHKV (94-1 APP) (C)	27 JAN 67	



FOR INFORMATION ONLY
CLASS B RELEASE TORR NO. 01956 DATE

(B) THIS SHEET ADDED

QTY REQD	PART OR IDENTIFYING NO	MANUFACTURE OR DESCRIPTION	FIRST NO
LIST OF MATERIALS			
RAYTHEON CO. LEXINGTON, MASS. DRAWING NO. 104145		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES S R S		FRONT PANEL ASSEMBLY LOGIC DRAWER NO.2	
DO NOT SCALE THIS DRAWING MATERIAL		NASA DRAWING NO 104159	
HEAT TREATMENT		CONTRACT NO. 512	
NET APPROVAL		F	
NET APPROVAL		SCALE 1/1	
NET APPROVAL		SHEET 2 OF 2	

1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
3. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
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16. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
17. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
18. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.

SEE NOTE 1

SEE NOTE 1

NOTES

1. ASSEMBLE FIND NO. 3 AND 4 USING FIND NO. 13
2. NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
3. FOR SYMBOLS, FABRICATION AND REQUIRED TESTS SEE ND1002032

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	CLASS B RELEASED PER TDRR NO. 01456		
2	CHANGED PER TDRR 02914	11/11/63	
3	CHANGED PER TDRR 01456	11/11/63	
4	CHANGED PER TDRR 01456	11/11/63	
5	CLASS II CHANGE PER RD 15088A	11/11/63	
6	CHANGED PER TDRR NO. 02962	11/11/63	
7	CHANGED PER TDRR NO. 02962	11/11/63	

FOR INFORMATION ONLY
CLASS B RELEASE TDRR NO. 01456 DATE 11/11/63

60	AN900516	WASHER, FLAT	18
1	1014234	CLAMP, CABLE	17
1	1006895-1	HARNES	16
1	1006895-5	SWITCH, ROTARY	15
3	1006895-5	LIGHT, INDICATOR	14
1	MS 3-400B3 CLASS 31	SEALING COMPOUND	13
21	MS25237 TRADE 344	LAMP	12
18	1006919-3	LIGHT, INDICATOR	11
10	MS24656-23	SWITCH, TOGGLE	10
60	MS35333-90	WASHER, LOCK	9
20	1006917-3	NUT, ADAPTER	8
10	MS24655-21	SWITCH, TOGGLE	7
3	MS31526-2P2B	KNOB, POINTER	6
2	1006895-2	SWITCH, ROTARY	5
3	MS31022-22	SCREW, SET	4
8	MS35200-40	SCREW, WASH	3
2	1014215-6	HANDLE	2
1	1014184	PANEL, FRONT	1

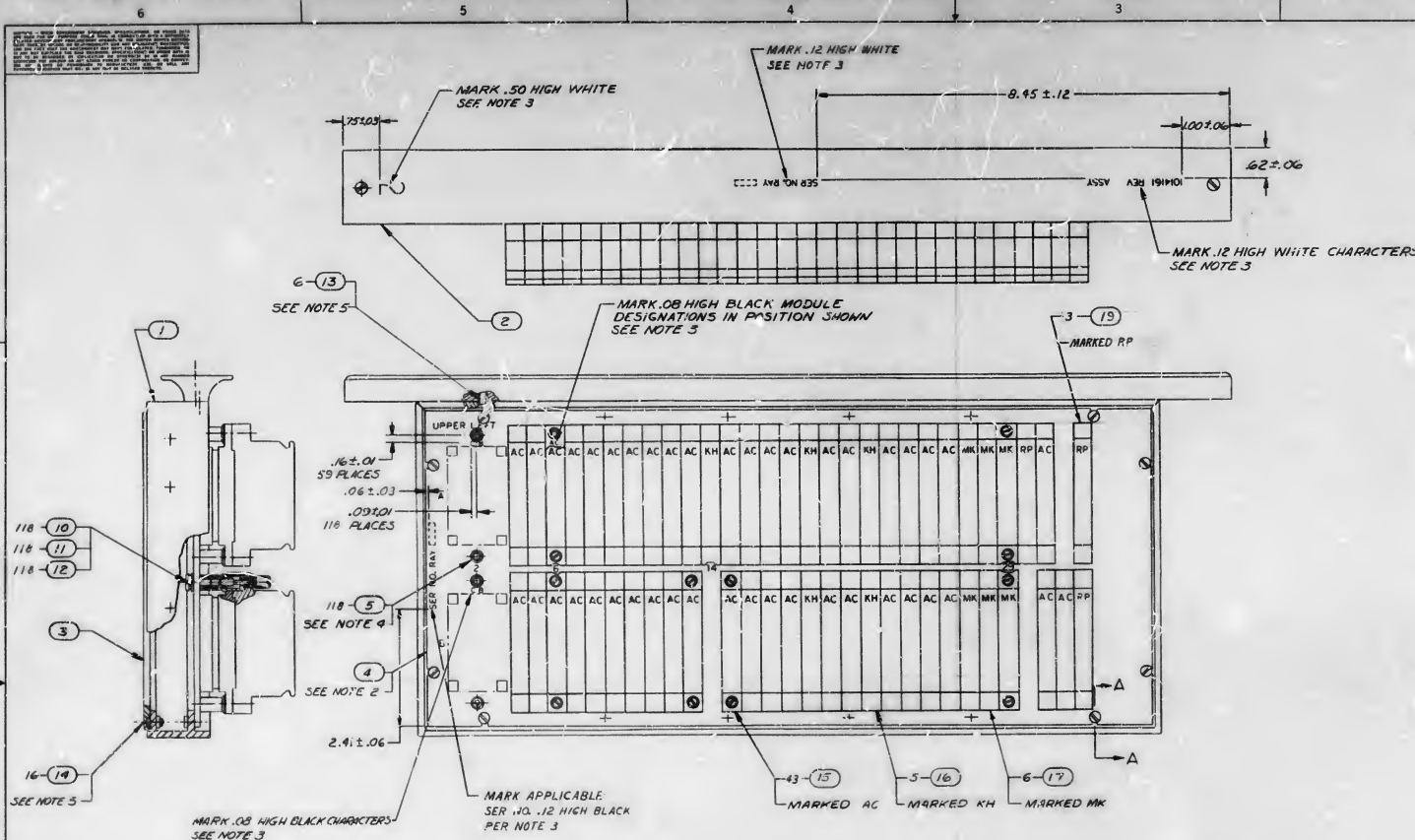
D	C
C	C
B	B
A	A

SH 1 SH 2
REV STATUS
OF SHEETS

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES FRACTIONS 16 DECIMALS 2 ANGLES 16		DRAWN BY: [Signature] CHECKED BY: [Signature] APPROVED BY: [Signature]	
DO NOT SCALE THIS DRAWING MATERIAL		HEAT TREATMENT	
NEXT ASSY USED ON: 1014185		FINAL FINISH	
APPLICATION		DATE: 11/11/63	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
FRONT PANEL, ASSEMBLY LOGIC DRAWER NO. 2	
DATE: 11/11/63	DESIGNER: [Signature]
SCALE: 1/1	INCHES: 10/4159

1



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	CLASS B RELEASE PER TOAR NO. 01297	5/22/63	
2	CLASS II CHANGE PER NO. R5348A	5/22/63	
3	CHANGED PER TOAR 01297	5/22/63	
4	CHANGED PER TOAR 01297	5/22/63	
5	CHANGED PER TOAR 01297	5/22/63	

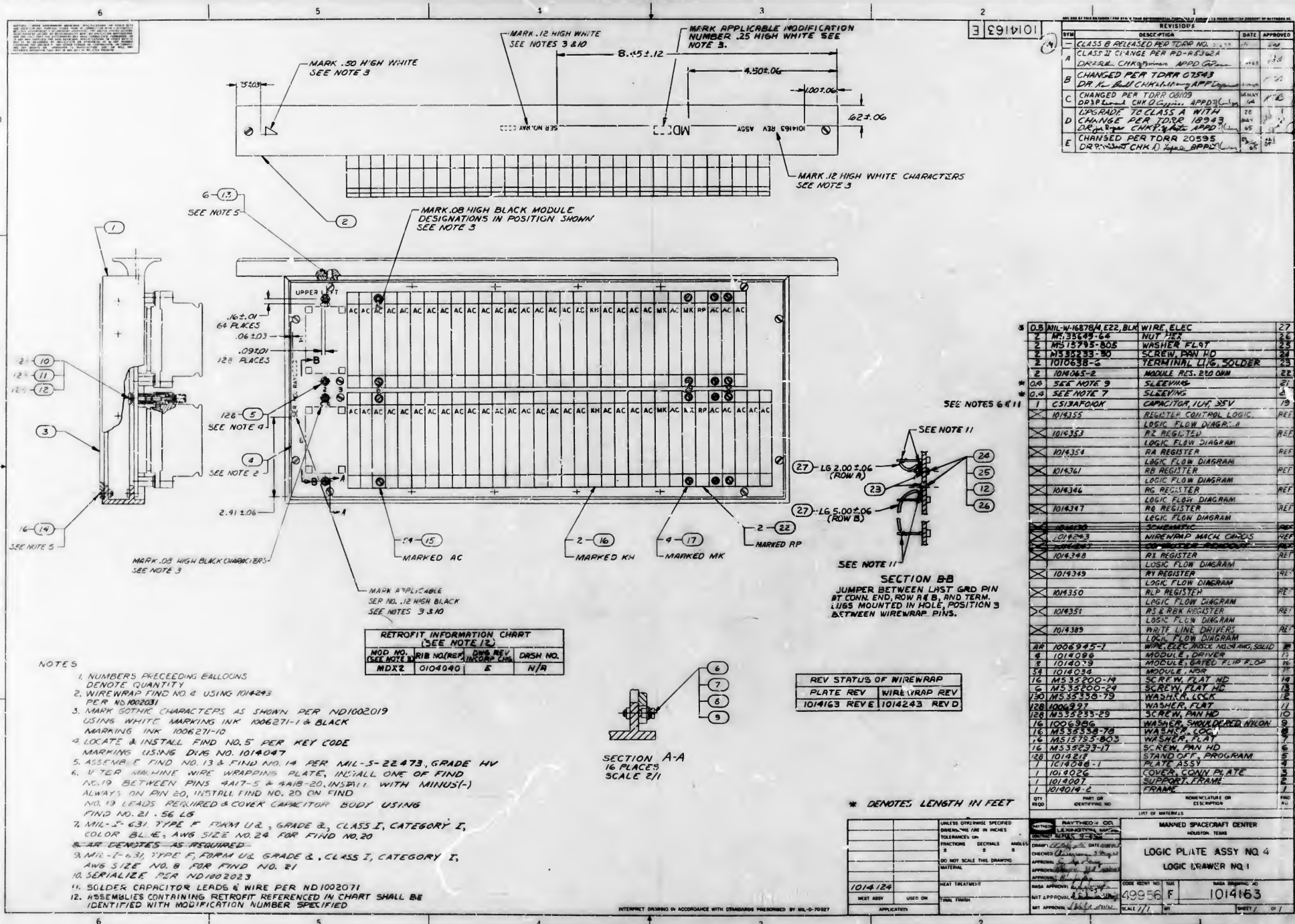
FOR INFORMATION ONLY
CLASS B RELEASE TOAR NO. 219 DATE 5/22/63

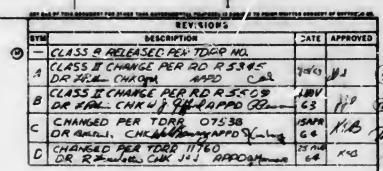
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4	1014065-3	MODULE, RESISTOR	19
5	1014065-4	MODULE, RESISTOR	19
6	1014065-5	MODULE, RESISTOR	19
7	1014065-6	MODULE, RESISTOR	19
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56	1014065-55	MODULE, RESISTOR	19
57	1014065-56	MODULE, RESISTOR	19
58	1014065-57	MODULE, RESISTOR	19
59	1014065-58	MODULE, RESISTOR	19
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62	1014065-61	MODULE, RESISTOR	19
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98	1014065-97	MODULE, RESISTOR	19
99	1014065-98	MODULE, RESISTOR	19
100	1014065-99	MODULE, RESISTOR	19
101	1014065-100	MODULE, RESISTOR	19

UNLESS OTHERWISE SPECIFIED (DIMENSIONS ARE IN INCHES) TOLERANCES ON FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL		DRAWN: [Signature] CHECKED: [Signature] APPROVED: [Signature] DATE: 5/22/63	
1014124 1014156 NEXT ASSY USED ON MATERIAL		HEAT TREATMENT FINISH TREATMENT FINISH APPROVAL: [Signature] FINISH APPROVAL: [Signature]	
1014124 1014156 NEXT ASSY USED ON MATERIAL		HEAT TREATMENT FINISH TREATMENT FINISH APPROVAL: [Signature] FINISH APPROVAL: [Signature]	

MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
LOGIC PLATE ASSY NO. 2 LOGIC DRAWER NO. 1	
DATE: 5/22/63 DRAWN: [Signature] CHECKED: [Signature] APPROVED: [Signature]	DATE: 5/22/63 DRAWN: [Signature] CHECKED: [Signature] APPROVED: [Signature]

1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
2. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
3. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
4. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
5. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
6. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
7. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
8. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
9. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.
10. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED.



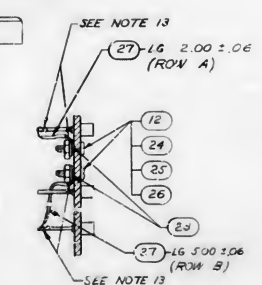


AR	SEE NOTE 9	SLEEPING	23
AR	SEE NOTE 7	SLEEPING	22
G	CS3AFOIOK	CAPACITOR 1UF. 35V	21
	1014129	TESTER - 2500V CAPACITAT	REF
	1014193	MRENAWAD MACK CARDS	REF
	1014181-31	COMPUTER - 8000000	REF
	1014359	TAPE SYNC & KEYBOARD CONT	REF
		LOGIC FLOW DIAGRAM	
	1014360	TAPE MARK CONTROL LOGIC	REF
		LOGIC FLOW DIAGRAM	
	1014270	REGISTER INPUT COUNTER	REF
		LOGIC FLOW DIAGRAM	
	1014264	TAPE VERIFY FAIL LOGIC	REF
		FLOW DIAGRAM	
AR	MIL-5-00035 CLASS 31	COMPOUND SEALING	20
AR	ND10020107	WIRED, NO 66 AWG	19
I	1014256	MODULE, CLOCK	18
S	1014079	MODULE, FLIP FLOP	17
	1014079	MODULE, GATED FLIP FLOP	16
EE	1014234	MODULE, NOR	15
I	M5 35200-14	SCREW, FLAT HD	14
I	M5 35200-29	SCREW, FLAT HD	13
IGB	M5 35358-79	WASHW, LOCK	12
IGB	1001497	WASH, FLAT	11
I	M535335-28	SCREW, PAN HD	10
I	1006306	WASHER, SHOULDERED NYLON	9
I	M535358-78	WASHER, FLT	8
I	M5 35795-503	WASHER, FLT	7
I	M535233-7	SCREW, PAN HD	6
IGB	101418	PLATE, PROGRAM	5
I	10140-6-1	PLATE ASSY	4
I	1014026	COVER, CONN PLATE	3
I	1140027	SUPPORT FRAME	2
I	1014018-E	FRAME	1
UNIT ON		DESCRIPTION OR	FIG NO
REQD	OR IDENTIFYING NO	DESCRIPTION	

- | | |
|------------------------|---------------|
| REV STATUS OF WIREWRAP | |
| R.ATE REV | WIRE WRAP REV |
| 10M165 REV D | 10M193 REV D |
| | |
| | |
| | |



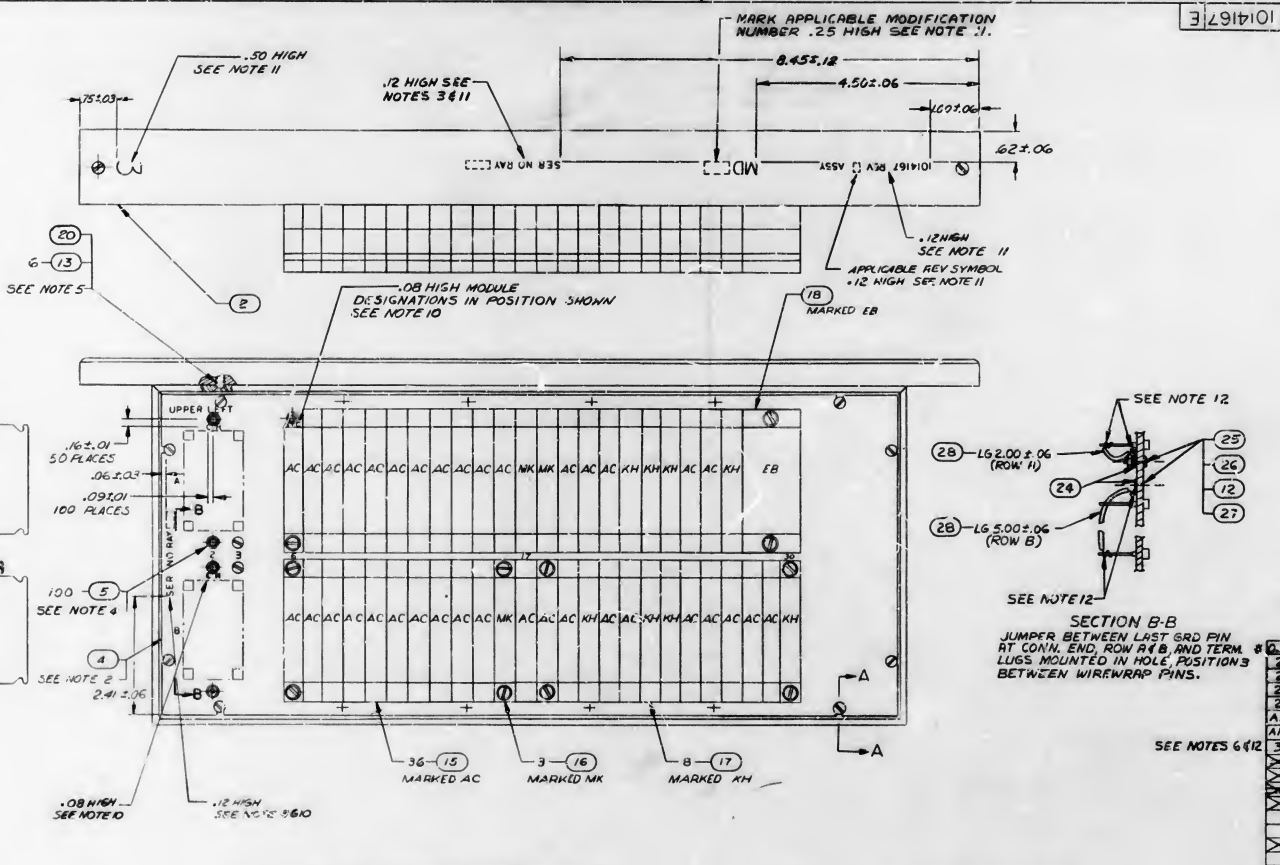
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± ANGLES ±		METHOD: RAYTHEON CO. LEONARD J. BARNES SURVEY: 8-12-54		LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWING: 1014-125-1014-156 CONTROL: 1014-125-1014-156 DO NOT SCRIP THIS DRAWING MATERIAL		APPROVAL: C. Searles APPROVAL: 1014-125-1014-156 APPROVAL: 1014-125-1014-156		LOGIC PLATE ASSY NO. 1 LOGIC DRAWING NO. 2	
1014-125 1014-156 NEXT ASSY USED ON		HEAT TREATMENT FINAL FINISH		COOK SENT NO. _____ DATE F 10/4/65	
APPLICATION		DESIGNED BY: 1014-125-1014-156 CHECKED BY: 1014-125-1014-156 NOT APPROVED: 1014-125-1014-156		SCALE 1/1 SHEET 1 / 1	



SEE NOTES 6 & 13

		LIST OF MATERIALS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ARE DECIMALS ANGLES ARE DEGREES		MATERIAL: <u>ALUMINUM</u> <u>44-HORRIGAN, STANLEY</u> CONTRACT NO. <u>72-3-238</u> DATE: <u>12/26/66</u> ORDERED BY: <u>W. L. JONES</u> APPROVAL: <u>W. L. JONES</u> APPROVAL: <u>W. L. JONES</u> APPROVAL: <u>W. L. JONES</u>	
DO NOT SCALE THIS DRAWING MATERIAL		AMES RESEARCH CENTER HOUSTON, TEXAS LOGIC PLATE ASSY NO 2 LOGIC DRAWER NO 2	
<u>1014125</u>	HEAT TREATMENT	NASA APPROVAL: <u>W. L. JONES</u> MET. APPROVAL: <u>W. L. JONES</u> MET. APPROVAL: <u>W. L. JONES</u>	STOCK IDENT NO <u>493556</u> SIZE <u>F</u>
NEXT ASSY USED ON	FINAL FINISH	MTR. APPROVAL: <u>W. L. JONES</u> SCALE: <u>1/1</u>	PARTS ORIGINATING NO <u>1014186</u>
APPLICATION		WT	SHWTS. OF

THIS DRAWING IS THE PROPERTY OF NASA. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE CONTRACT. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM NASA.



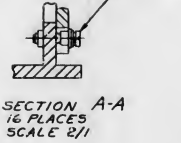
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	CLASS B RELEASED PER TORR NO. 0763		
2	CLASS I CHANGE PER AD 95965 DRY RUN CHA QM APD CAD	30/05/83	
3	CLASS II CHANGE PER RD-R 5510 DR CDG CHA QM APPL GPR	30/05/83	
4	CHANGED PER TORR 07595 CHA QM CHA QM APD	30/05/83	
5	UPGRADE TO CLASS A WITH CHANGE PER TORR 17449	30/05/83	
6	CHANGED PER TORR 20595 DRY RUN CHA QM APD	30/05/83	

SECTION B-B
JUMPER BETWEEN LAST BRD PIN AT CONN. END, ROW A/B, AND TERM LUGS MOUNTED IN HOLE, POSITIONS BETWEEN WIREWRAP PINS.

RETROFIT INFORMATION CHART (SEE NOTE 13)			
MOD NO. (SEE NOTE 11)	RIB NO.(REF.)	DWG REV (MORF CHG)	DASH NO.
MDX2	0104040	E	N/A

REV STATUS OF WIREWRAP	
PLATE REV	WIREWRAP REV
1014167 REVE	1014314 REVC

- NOTES
- NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
 - WIREWRAP FIND NO 4 USING 1014314 PER ND1002031
 - SERIALIZE PER ND1002023
 - LOCATE & INSTALL FIND NO 5 PER KEY CODE MARKING USING DWS NO 1014047
 - ASSEMBLY FIND NO.13 AND FIND NO.14 USING FIND NO.20
 - AFTER MACHINE WIRE WRAPPING, PLATE INSTALL ONE OF FIND NO.21 BETWEEN PINS 1416-17, 1415-20, ONE OF FIND NO.21 BETWEEN PINS 1416-17, 1415-20 AND ONE OF FIND NO.21 BETWEEN PINS 1416-17, 1415-20, INSTALL WITH MINUS(-) ALWAYS ON PIN 20. INSTALL FIND NO.22 ON FIND NO.21 LEADS AS REQUIRED AND COVER CAPACITOR BODY USING FIND NO.23, 36 LG
 - MIL-I-7444, TYPE I, COLOR BLUE
ANG SIZE NO.24 FOR FIND NO.22
 - MIL-I-7444, TYPE I, ANG SIZE NO.8 FOR FIND NO.23
 - MARK GOING CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
 - MARK GOING CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-1
 - SOLDER CAPACITOR LEADS & WIRE PER ND1002071
 - ASSEMBLIES CONTAINING RETROFIT REFERENCED IN CHART SHALL BE IDENTIFIED WITH MODIFICATION NUMBER SPECIFIED.

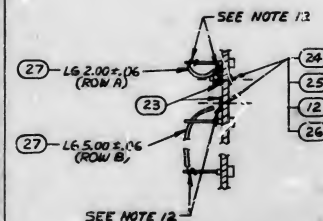


* DENOTES LENGTH IN FEET

* DENOTES LENGTH IN FEET		LIST OF MATERIALS	
QTY	IDENTIFYING NO	QTY	IDENTIFYING NO
1	1014018-1	1	1014018-1
1	1014018-2	1	1014018-2
1	1014018-3	1	1014018-3
1	1014018-4	1	1014018-4
1	1014018-5	1	1014018-5
1	1014018-6	1	1014018-6
1	1014018-7	1	1014018-7
1	1014018-8	1	1014018-8
1	1014018-9	1	1014018-9
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1	1014018-98	1	1014018-98
1	1014018-99	1	1014018-99
1	1014018-100	1	1014018-100

LOGK PLATE ASSY NQ 3
LOGIC DRAWER NQ 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-16057



SECTION B-B
JUMPER BETWEEN LAST GRID PIN
AT CONN. END, ROW A48, AND TERM.
LUGS MOUNTED IN HOLE, POSITION 3
BETWEEN WIREWRAP PINS.

REV STATUS OF WIREWRAP	
PLATE REV	WIREWRAP REV
1014168 REV E	1014312 REV A

A technical drawing of a bolted joint. It shows a bolt passing through a plate and a nut on the other side. A lock washer is positioned between the nut and the plate. A leader line points to the lock washer with the label 'lock washer'.

1. NUMBERS PRECEEDING BALLOONS
DENOTE QUANTITY
2. WIRE/WRAP FIND NO.4 USING 1014312
PER ND1002031
3. SERIALS: PE-ND1002023
4. LOCATE & INSTALL FIND NO 5 PER KEY
CODE MARKING USING DWS NO.1014047
5. ASSEMBLE FIND NO.13 AND FIND NO.14
USING FIND NO.15
6. 101411 BALANCE WIRE/REWRAPING PLATE INSTALL ONE OF FIND NO.20
BETWEEN PINS 4821-3 & 4822-20, ONE C/F FIND NO.20 BETWEEN
PINS 4821-G & 4821-20, ONE OF FIND NO.20 BETWEEN PINS 482-B
& 482-20, ONE OF FIND NO.20 BETWEEN PINS 482A-17 & 482S-20
& ONE OF FIND NO.20 BETWEEN PINS 482S-4 & 482S-20, INSTALL WITH
MINUS (-) ALWAYS ON PIN 20, INSTALL FIND NO. 21 ON
FIND NO.20 LEADS AS REQUIRED & COME 9 CAPACITOR BODY USING
FIND NO.22 & 66 L5
7. MIL-I-7444, TYPE I AVG SIZE 29
FOR FIND NO.21
- ~~8. MIL-I-7444, TYPE I, AVG SIZE NO.8 FOR FIND NO.22~~
9. MARK GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING BLACK INK 1006271-10
10. MARK GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING WHITE INK 1006271-11
11. SOLDER CAP TO LEADS AND WIRE PER ND 1002071
12. ASSEMBLYS CONTAINING RETROFIT REFERENCED IN CHART SHALL BE
IDENTIFIED WITH MODIFICATION NUMBER SPECIFIED.

* DENOTES LENGTH IN FEET

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
		TOLERANCES ON
		FRACTIONS DECIMALS
		± ±
		DO NOT SCALE THIS DRAWING
		INTERNAL
1014125		HAT TREATMENT
NEXT ASSY	USED ON	FINAL FINISH
APPLICATION		

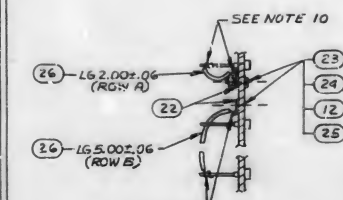
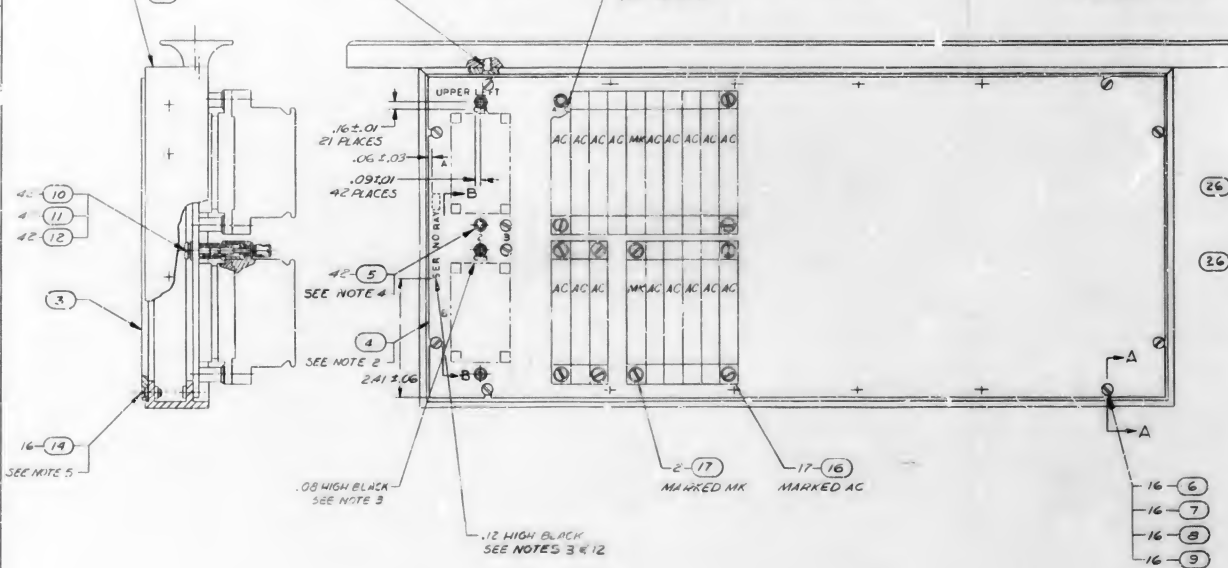
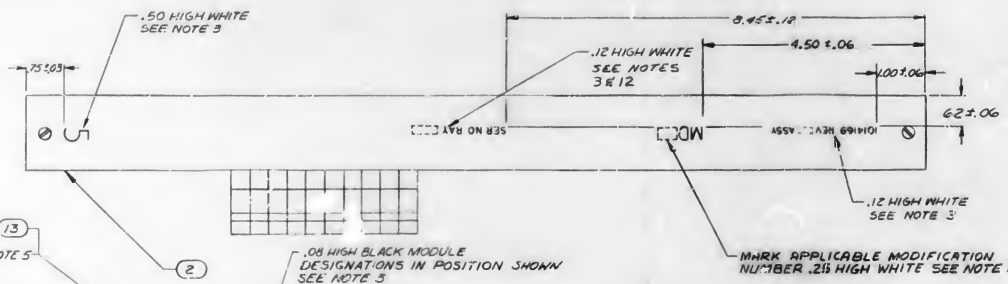
LIST OF MATERIALS

MANNED SPACECRAFT CENTER

LOGIC PLATE ASSY NO. 4
LOGIC DRAWER NO. 2

COPIES IDENT NO	SIZE	WALDA DRAWING NO
49956	F	1014168

[illegible]



SECTION B-B
JUMPER BETWEEN LAST GRD PIN
AT COMM. END, ROW A & B, AND TERM.
LUGS MOUNTED IN HOLE, POSITION
3 BETWEEN WIREWRAP PINS

- NOTES
- NUMBERS PRECEDING BALLOONS DENOTE QUANTITY
 - WIREWRAP FIND NO. 4 USING 10143:3 PER ND1002031
 - MARK GOTHIC CHARACTERS AS SHOWN PER ND1002019 USING MARKING INKS 1036271-1 & 1006271-10
 - LOCATE & INSTALL FIND NO. 5 PER KEY CODE MARKING USING DWG NO. 10140-7
 - ASSEMBLE FIND NO. 13 AND FIND NO. 14 TO FIND 1 USING FIND 15
 - AFTER MACHINE WIREWRAPPING PLATE, INSTALL ONE OF FIND NO. 19 BETWEEN PINS 5B15-3 & 5B14-20 ONE OF FIND NO. 19 BETWEEN PINS 5A15-6 & 5A15-20 & ONE OF FIND NO. 19 BETWEEN PINS 5B3-18 & 5B6-20, INSTALL WITH MINUT (-) ALWAYS ON PIN 20, INSTALL FIND NO. 20 ON FIND NO. 19 LEADS AS REQUIRED & COVER CAPACITOR BODY USING FIND NO. 21 .56 L6.
 - MIL 27444, TYPE 1, COLOR BLUE, AVG. SIZE NO. 24, ROR FIND NO. 20
 - CR. LEADS AS REQUIRED
 - MIL-27444 TYPE 1, AVG. SIZE NO. 21
 - SOLDER CAPACITOR LEADS & WIRE PER ND1002071
 - ASSEMBLIES CONTAINING RETROFIT REFERENCED IN CHART SHALL BE IDENTIFIED WITH MODIFICATION NUMBER SPECIFIED.
 - SERIALIZE PER ND100203



SECTION A-A
16 PLACES
SCALE 2/1

RETROFIT INFORMATION CHART (SEE NOTE 11)			
MOD NO. (SEE NOTE 3)	RIB NO (REF)	DWG REV (INCORP CHG)	DRSW NO.
MDX2	010040	E	N/A

REV STATUS OF WIREWRAP	
PLATE REV	WIREWRAP REV
101413 REVE	1014131 REVD

* DENOTES LENGTH IN FEET

LIST OF MATERIALS	
QTY	DESCRIPTION
1	WIRE, ELEC
2	NUT, HEX
2	WASHER, FLAT
2	SCREW, PAN HD
2	TERMINAL LUG SOLDER
0.4	SLEEVING
1	WIREWRAP MACH CARDS
1	TAPE PUNCH INPUTS
1	LOGIC FLOW DIAGRAM
1	RD AGREEMENT AGN
1	LOGIC FLOW DIAGRAM
1	RD AGREEMENT
1	LOGIC FLOW DIAGRAM
0.4	SLEEVING
1	CAPACITOR, 10K 33V
1	WIRE ELEC INSUL NO DRARY, SOLID
1	MODULE, DRIVER
1	MODULE, NGR
1	SCREW, PAN HD
1	SCREW, FLAT HD
1	SCREW, FLAT HD
1	WASHER, LOCK
1	WASHER, FLAT
1	SCREW, PAN HD
1	WASHER, SPACER/STANDOFF
1	WASHER, LOCK
1	WASHER, FLAT
1	SCREW, PAN HD
1	STANDOFF, PROGRAM
1	PLATE, ASSY
1	COVER, CONN PLATE
1	SUPPORT FRAME
1	FRAME

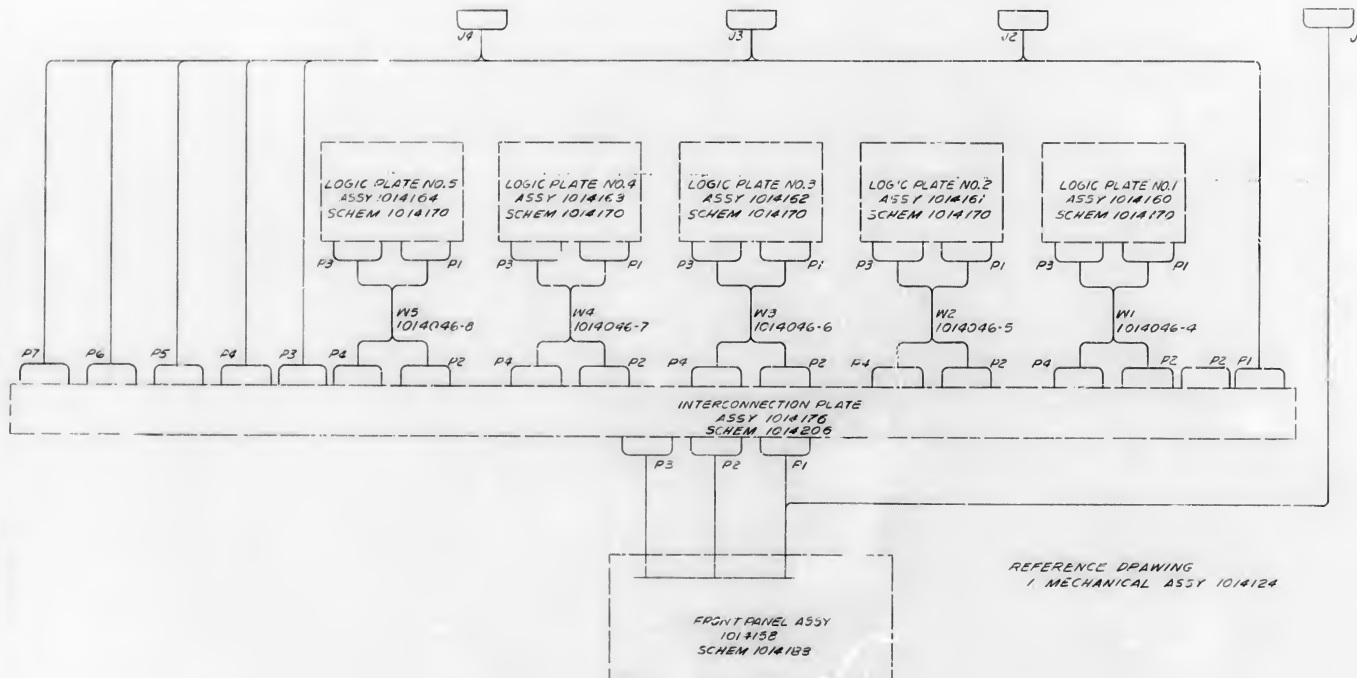
REVISIONS	
REV	DESCRIPTION
1	CLASS B RELEASED PER TDR NO. 1
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3	CLASS B CHANGE PER RD 8385
4	CLASS B CHANGE PER RD 8385
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37	CLASS B CHANGE PER RD 8385
38	CLASS B CHANGE PER RD 8385
39	CLASS B CHANGE PER RD 8385
40	CLASS B CHANGE PER RD 8385
41	CLASS B CHANGE PER RD 8385
42	CLASS B CHANGE PER RD 8385
43	CLASS B CHANGE PER RD 8385
44	CLASS B CHANGE PER RD 8385
45	CLASS B CHANGE PER RD 8385
46	CLASS B CHANGE PER RD 8385
47	CLASS B CHANGE PER RD 8385
48	CLASS B CHANGE PER RD 8385
49	CLASS B CHANGE PER RD 8385
50	CLASS B CHANGE PER RD 8385

LOGIC PLATE ASSY NO. 5
LOGIC DRAWER NO. 2

49356 F 1014169

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVED
-	CLASS B RELEASE PER TDRP		

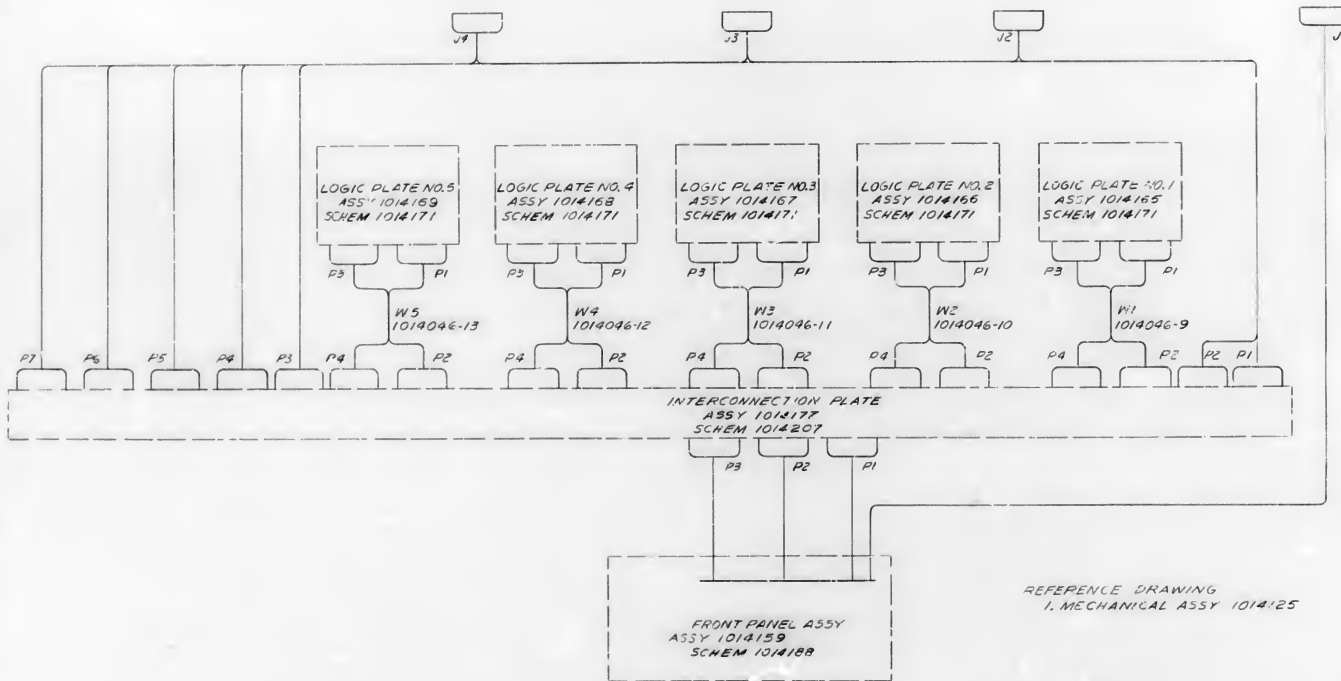


FOR INFORMATION ONLY
CLASS B RELEASE PER TDRP NO. 0143 DATE 12 June 83

REFERENCE DRAWING
1. MECHANICAL ASSY 1014124

QTY REQD	PART OR PARTYING NO.	NUMERICALS FOR DESCRIPTION	UNIT
LIST OF MATERIALS			
RAYTHEON CO. LEXINGTON, MASS. CONTRACT NO. NAS-9-398		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY: [Signature] CHECKED BY: [Signature] APPROVED BY: [Signature] DATE: 10/14/56		INTERCONN DIAGRAM LOGIC DRAWER NO. 1	
NEXT ASSY 1014124		NASA DRAWING NO. F 1014174	
USED ON APPLICATION		SCALE: NONE	
HEAT TREATMENT		SHEET 1 OF 1	

REVISIONS		
REV	DESCRIPTION	DATE / APP / NOVEL
1	CLASS B RELEASE PER TDRP	



FOR INFORMATION ONLY
CLASS B RELEASE PER TDRP NO. 2 DATE 12/12/2012

REFERENCE DRAWING
1. MECHANICAL ASSY 1014125

QTY REQ		PART OR IDENTIFYING NO		NOMENCLATURE OR IDENTIFYING NO		LIST OF MATERIALS	
1		RAYTHEON CO		MANNED SPACECRAFT CENTER		HEWLETT, TEXAS	
1014125		1014156		INTERCONN DIAGRAM		LOGIC DRAWER NO. 2	
1014125		1014156		F 1014175		SHEET 1 OF 1	

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REVISIONS			
BY	DESCRIPTION	DATE	APPROVED
B	REPLACES REV A WITH CHANGE RELEASED TO MIT AT THIS REVISION PER TDRR 08911	4/24/63	WBB
C	CLASS II CHANGE PER RDR5957	5/14/63	WBB
D	CHANGED PER TDRR 08911	4/24/63	WBB
E	CHANGED PER TDRR 12023	4/24/63	WBB



FOR INFORMATION ONLY
CLASS B RELEASE TDRR 08911 DATE 2-6-63

- NOTES
1. SEE 1014089 FOR AGC CALIBRATION SYSTEM CONSOLE ASSY FAMILY TREE
 2. SEE 1014203 FOR COMPUTER SIMULATOR DRAWER ASSY FAMILY TREE
 3. SEE 1020090 FOR AGC/CTS OPERATION CONSOLE ASSY FAMILY TREE

REV	SH1	SH2	SH3	SH4	SH5	SH6	SH7	SH8	SH9	SH10
D	D	D	D	D	D	D	D	D	D	D
C	C	C	C	C	C	C	C	C	C	C
B	B	B	B	B	B	B	B	B	B	B

REVISION STATUS OF SHEETS	
UNLESS OTHERWISE SPECIFIED	
DEFINITIONS ARE IN INCHES	
FRACTIONS DELIMITED BY	
DO NOT SCALE THIS DRAWING	
MATERIAL	
HEAT TREATMENT	
FINISH	
NEXT ASSY	USED ON
APPLICATION	

Ⓢ REPLACES REV A WITH CHANGE

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIG NO.
----------	-------------------------	-----------------------------	---------

LIST OF MATERIALS

DATE	RAYTHEON CO	MANNED SPACECRAFT CENTER HOUSTON, TEX.
BY	LEXINGTON, MASS	
CHECKED	BY	APOLLO CONFIGURATION CHART (FAMILY TREE) COMPUTER TEST SET
APPROVAL	BY	
NASA APPROVAL	BY	CODE IDENT
NET APPROVAL	BY	SIZE D
NET APPROVAL	BY	SCALE

NOTES.

1. THIS DRAWING DEFINES TOTAL G & N SYSTEMS IN TERMS OF IDENTIFIABLE, SEPARATELY INSTALLED, PIECES OR SEPARATE PARTS.

2. NUMBER IN PARENTHESIS FOLLOWING A PART NUMBER INDICATES QUANTITY OF THAT PART.

3. OUTSTANDING ECP'S ARE THOSE THAT HAVE BEEN APPROVED, BUT NOT INCORPORATED. PART NUMBERS REFLECT CONFIGURATION CHANGES AS A RESULT OF INCORPORATED ECP'S.

4. PARTS REMOVED FROM FIND NUMBERS 2, 25, 32, 37, 58, 67, 76, 106, 150 AND 151 FOR SHIPPING AND/OR INSTALLATION ARE LISTED IN TABLE I.

5. CLAMP SIZES SELECTED TO CONFORM TO BUNDLE DIAMETERS. 2 CLAMPS, 1010400-4 (FIND NO. 108), ARE FURNISHED AS PART OF THE AIRBORNE VIBRATION ASSY FOR G & N 17.

6. OPTIONAL EQUIPMENT FOR USE WITH OPTICAL UNIT.

7. THE FOLLOWING INCORPORATED ECP'S DO NOT REFLECT PART NUMBER CHANGES. PART NUMBERS WILL BE CHANGED AS SOON AS THIS INFORMATION IS AVAILABLE - NONE.

8. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

9. REQUIRED FOR THERMAL VACUUM TEST.

10. K START TAPE ASSEMBLY FOR USE AT NAA. USE REVISION INDICATED.

11. FLIGHT PROGRAM LISTED FOR GEN 123 IS NOT AUTHORIZED FOR THIS APPLICATION BY ENGINEERING DESIGN RELEASE OR REVISION.

12. K START TAPE ASSEMBLY FOR USE AT KSC. USE REVISION INDICATED.

13. K START TAPE ASSEMBLY FOR USE AT MSC. USE REVISION INDICATED.

14. THE PARTS LISTED IN COLUMN "B" OF TABLE II ARE TO BE REMOVED FROM THE ASSEMBLY LISTED IN COLUMN "A" PRIOR TO SVC INSTALLATION. THE PARTS REMOVED ARE TO BE RETAINED WITH THE G & N SYSTEM. FOR REUSE IN THE EVENT OF REMOVAL OF FIND NO. 35 OR 76 FROM THE SVC.

15. THE CONFIGURATION OF THESE SYSTEMS WILL NO LONGER BE MAINTAINED.

151 CASE AND PANEL ASSY CDU	154 THRU 162
150 COUPLER DISPLAY ASSY	150 THRU 153
32 WIRING HARNESS, ASC TO PSA/GEN TO SC	99
106 AIRBORNE VIBRATION ASSY	107 THRU 115
58 G & N INDICATOR & CONTROL PANEL ASSY	58 AND 66
76 NAV BASE & OPTICAL UNIT ASSY	77 THRU 86
67 AGE HARNESS & PSA/ENO CONNECTOR ASSY	68 THRU 75
17 COU FRAME ASSY	41 AND 43
25 AGC NAV DRXY	25 THRU 30
2 APOLLO GUIDANCE COMPUTER	3 THRU 24
FIND NO.	DESCRIPTION
	OR
	DESCRIPTION
	ITEMS REMOVED FOR SHIPPING AND/OR INSTALLATION
TABLE I (SEE NOTE 4)	

76	IMU MOUNTING PADS	1899960	1
	IMU MOUNTING PADS	1899959	1
	IMU MOUNTING PADS	1899958	1
	IMU MOUNTING PADS	1899957	1
	PROTECTIVE PADS	1001465	1
	PROTECTIVE PADS	1001464	1
	PROTECTIVE PADS	1001461	1
	PROTECTIVE PADS	1001460	1
FIND NO.	DESCRIPTION	PART	QTY
COLUMN A	COLUMN B		
TABLE II (SEE NOTE 14)			

100010-307	100016-307	100010-307
100151	100151	100151
1000293	1000293	1000293
1001463	1001463	1001463
1001470	1001470	1001470
1010400-5	1010400-5	1010400-5
1007563-01	1007563-01	1007563-01
2011785	2011785	2011785
2012667	2012667	2012667
2012699	2012699	2012699
2012700	2012700	2012700
2012719	2012719	2012719
101625-39 (5)	101625-39 (5)	101625-39 (5)
101627-01	101627-01	101627-01
1899954-01	1899954-01	1899954-01
AN 360 C 5161	AN 360 C 5161	AN 360 C 5161
1010718-001	1010718-001	1010718-001
1899915	1899915	1899915
1010827	1010827	1010827
1899911	1899911	1899911
1010828	1010828	1010828
1899997-002	1899997-002	1899997-002
1899997-001	1899997-001	1899997-001
1899990	1899990	1899990
1899918	1899918	1899918
1899914	1899914	1899914
1899950-341	1899950-341	1899950-341
1010705-6	1010705-6	1010705-6
1010705-8 (1)	1010705-8 (1)	1010705-8 (1)
1010400 (10)	1010400 (10)	1010400 (10)
1015086-01	1015086-01	1015086-01
2014764-021	2014764-021	2014764-021
2014764-011	2014764-011	2014764-011
1015175-041	1015175-041	1015175-041
1015132	1015132	1015132
1015022-021	1015022-021	1015022-021
1015064-021	1015064-021	1015064-021
1014628-021	1014628-021	1014628-021
1015065-091	1015065-091	1015065-091
1014667-031	1014667-031	1014667-031
1008591	1008591	1008591
1007220	1007220	1007220
1007580-021	1007580-021	1007580-021
1007579-021	1007579-021	1007579-021
1007578-031	1007578-031	1007578-031
1007593-011	1007593-011	1007593-011
1007577-031	1007577-031	1007577-031
1007576-021	1007576-021	1007576-021
1007575-031	1007575-031	1007575-031
1007574-031	1007574-031	1007574-031
1007573-031	1007573-031	1007573-031
1007572-041	1007572-041	1007572-041
1007571-031	1007571-031	1007571-031
1007570-041	1007570-041	1007570-041
1001500-111	1001500-111	1001500-091
1001500-051	1001500-051	1001500-051
1004866-011	1004866-011	1004866-011
1003563-051	1003563-051	1003563-051
MS 35337-80 (4)	MS 35337-80 (4)	MS 35337-80 (4)
MS 15795-007 (10)	MS 15795-007 (10)	MS 15795-007 (10)
MS 16995-16 (4)	MS 16995-16 (4)	MS 16995-16 (4)
1004469	1004469	1004469
1004470	1004470	1004470
1003706-051	1003706-051	1003706-051
1004730	1004730	1004730
1003714	1003714	1003714
1004728	1004728	1004728
MS 15795-808	MS 15795-808	MS 15795-808
100630-40	100630-40	100630-40
100630-39	100630-39	100630-39
1004783	1004783	1004783
1003730	1003730	1003730
1003735	1003735	1003735
MS 16996-10	MS 16996-10	MS 16996-10
MS 16996-13	MS 16996-13	MS 16996-13
1003700-071	1003700-051	1003700-051
OUTSTANDING ECP'S	642	474 (PARTIAL)
CONFIGURATION DASH NO.	-121	-111
G & N SYSTEMS	123	122
REMARKS		

1014999

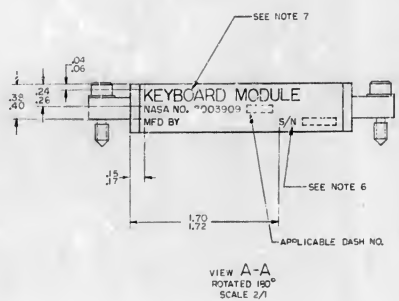
UN

CB

1

CONFIGURATION DASH NO.	-121	-111	-101	-0
G & N SYSTEMS	123	122	121	1
REMARKS				

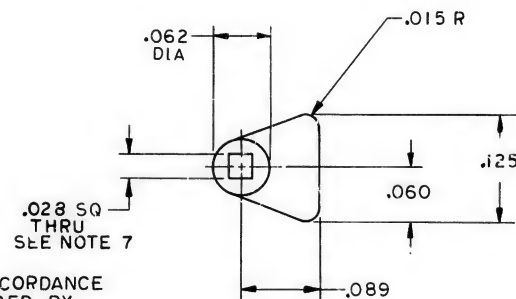
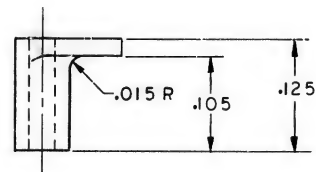
212121



- ALL CATHODE END OF DIODES
ARE LOCATED THIS SIDE

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE		BY INSTRUMENTS AND LAB COMPARISON		MANUFACTURER: SPACECRAFT CENTER HOUSTON, TEXAS	
		FUNCTIONS OR DIMENSIONS APPLIED		DRAWN BY: <u>W. J. BARNETT</u> INTERVIEWED BY: <u>W. J. BARNETT</u> APPROVED BY: <u>W. J. BARNETT</u> CHECKED BY: <u>W. J. BARNETT</u> REVISION: <u>W. J. BARNETT</u>		KEYBOARD ASSEMBLY MODULE DB AGE DESK	
2668950		DO NOT SCALE THIS DRAWING NET/REAL				DATE DRAWN: 10/30/68	
2603981						SIZE: E	
2003900		NET/TREATMENT				20039009	
NEXT STEP		FINAL TEST		SET APPROVED BY: <u>W. J. BARNETT</u>		SCALE: 4/1 WT	
APPLICATION						SHEET 1	

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NOTES

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. MATL ABS THERMO PLASTIC (GENERAL PURPOSE MOLDING GRADE) COLOR-YELLOW PER MIL-M-22544 TYPE I
3. ALL SURFACES 63/ UNLESS OTHERWISE SPECIFIED
4. UNLESS OTHERWISE SPECIFIED ALL FILLETS AND RADII TO BE .005 MAX
5. REMOVE BURRS AND SHARP EDGES .005 MAX
6. IDENTIFY WITH DRAWING NO. AND REVISION PER ND1002019
7. SQUARE SHAFT OF DWG NO. 2004066 TO MATCH SQUARE HOLE (LIGHT INTERFERENCE FIT .0000/.0006) IN DWG NO. 2004047

2003049	
2003040	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μ f
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
 \pm — \pm .005 \pm —
DO NOT SCALE THIS DRAWING

MATERIAL

SEE NOTE 2

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN: J. A. Zaffini 1/18/65		FINGER WRAPOST, FEMALE FIXED MEMORY MODULE	
CHECKED: R. J. Long 2/10/65			
APPROVED: J. D. London 2/11/65			
APPROVED: E. J. Hall 2/11/65			
APPROVED MIT	W. J. Gaffney 5/1/65	CODE IDENT NO.	SIZE
APPROVED MSC	M. J. Hall 5/1/65	80230	C
DATE	SCALE 10/1	DRAWING NO.	2004047
		SHEET	OF 1

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327. THIS DRAWING REFLECTS TOTAL G & H SYSTEMS IN TERMS OF IDENTIFIABLE, SEPARATELY IDENTIFIABLE PIECES OR DISCRETE SEPARATE PARTS.
2. OUTSTANDING CP'S ARE THOSE THAT HAVE BEEN APPROVED, BUT NOT INCORPORATED. PARTS NUMBERS REFLECT CONFIGURATION CHANGES AS A RESULT OF INCORPORATING CP'S. INSTALLATION AND/OR REMOVAL OF PARTS ARE NOT TO BE DONE.
3. PARTS DERIVED FROM FIND NUMBERS 2, 17, 22, 27, AND 53 FOR SHIPPING AND/OR INSTALLATION ARE LISTED IN TABLE 1.
4. CLAMP SIZES SELECTED TO CONFORM TO BUNDI D1A METERS.
5. (*) DENOTES THERMOCOUPLE ASSEMBLY.
6. K - START TAP ASSEMBLY FOR USE AT KSC. USE REVISION INDICATED.
7. K - START TAP ASSEMBLY FOR USE AT GSC. USE REVISION INDICATED.
8. K - START TAP ASSEMBLY FOR USE AT RSC. USE REVISION INDICATED.
9. L - START TAP ASSEMBLY FOR USE AT MSC. USE REVISION INDICATED.
10. THE PART(S) APD/OR ASSEMBLY(IES) LISTED IN COLUMN "B" OF TABLE II FORM THE ASSEMBLY LISTED IN COLUMN "A".
11. THE PART(S) LISTED IN COLUMN "B" OF TABLE III ARE A PART OF THE ASSEMBLY LISTED IN COLUMN "A".
12. FIND NUMBER 51 IS TO BE REPLACED WITH FIND NUMBER 10 PRIOR TO FLIGHT.
13. REFERENCE DRAWINGS:
1021020 MASTER RETROFIT KIT - LIST - APOLLO G & H (AC).
1006043 G & H MASTER RETROFIT KIT - LIST (KIC).
1014001 G & H MASTER RETROFIT KIT LIST - COMPUTER SUB-SYSTEM (RAY).
1400000 RETROFIT KIT LIST - COMPUTER SUB-SYSTEM (RAY).
1400000 RETROFIT KIT LIST - COMPUTER SUB-SYSTEM (RAY).

53	RAY SASE ASSY	54	THRU 64
27	PSA	28	"
22	CDU	23	"
17	PTA	18	"
2	APOLLO GUIDANCE COMPUTER	3	"
FIND NO.	NOMENCLATURE OR DESCRIPTION	ITEMS REMOVED FOR SHIPPING AND/ OR INSTALLATION	

TABLE 1 (SEE NOTE A)

FIND NO. 39	FIND NO.'S 40 THRU 48
FIND NO. 15	FIND NO.'S 16, 17
TABLE 1 (SEE NOTE 10)	

FIND NO. 70	FIND NO. 72
FIND NO. 53	FIND NO. 54 YHRU 64
FIND NO. 27	FIND NO. 28
FIND NO. 22	FIND NO. 23
FIND NO. 17	FIND NO. 18
FIND NO. 8	FIND NO. 5

[illegible]

OUTSTANDING ECP'S
PLANNED FOR RETROFIT

CONFIGURATION DASH M
G & N SYSTEMS

SPACECRAFT ALLOCATI

[illegible]

6014999

CONFIGURATION: 15H NO.
G & N SYSTEM
SPACECRAFT ALLOCATION

-201
622

-211
621

-201
620

-191
619

-181
618

-171
617

-161
616

-151
615

-141
614

-131
613

-121
612

-111
611

-101
610

-91
609

-81
608

6014999

LN
DF 2

NOTES:

1. THIS DRAWING DEFINES CONFIGURATION OF SUB-SYSTEMS AND SYSTEMS UP UNTIL THE TIME OF DELIVERY TO NASA. SEE INSTALLATION LIST 6014999 FOR CONFIGURATION CHANGES DUE TO RETROFIT.
2. PROCURE TO P'S 6015000.
3. REFERENCE DRAWINGS:
G & N SUPPORTING DOCUMENT LIST-LEM-6019999.
INSTALLATION LIST-APOLLO GUIDANCE EQUIPMENT-LEM-6014999.
- 4.
5. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED IN MIL-D-70327.

REVISIONS				DATE	APPR
REV	DESCRIPTION	REV	REV	DATE	APPR
CA	REPLACES REV B2 WITH CHANGE PER TORR 36833			27 SEP 68	EMS
CB	REV STATUS CHANGED			23 SEP 68	END
CC	REVISED PER TORR 37345			25 SEP 68	JUN
CD	REVISED PER TORR 37351			5 DEC 68	RWH

6004000-051												INSTALLATION KIT, COMPUTER GROUP-LEM	1	05	19
6004000-041	6004000-041	6004000-041	6004000-031	6004000-041	6004000-041	6004000-041	6004000-041					INSTALLATION KIT, COMPUTER GROUP-LEM	1	05	18
										6011856		ADT HIGH DENSITY FILTER ASSY	15	65	17
2003994-011	2003994-011	2003994-011	2003994-011	2003994-011	2003994-011	2003994-011	2003994-011					UNIVERSAL DSKY	1	05	16
6007013-021	6007013-021	6007013-011	6007013-011	6007013-011								SIGNAL CONDITIONER ASSY LEM OPERATIONAL	1	30	15
6007020	6007020	6007020	6007020	6007020								INSTALLATION KIT SIGNAL CONDITIONER ASSY	1	30	14
												TO PSA LEM OPERATIONAL			
					6007021	6007021	6007021	6007021				INSTALLATION KIT SIGNAL CONDITIONER ASSY	1	30	13
												TO PSA LEM FLIGHT-QUAL			
	6004000-021	6004000-021	6004000-021	6004000-011	6004000-011	6004000-011	6004000-011					INSTALLATION KIT COMPUTER GROUP LEM	1	05	12
							2003950-011	2003950-011				AGC DSKY ASSEMBLY	1	05	11
2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-021	2003993-011	2003200-031	2003200-011	2003200-021					COMPUTER ASSEMBLY	1	05	10
6011000-061	6011000-061	6011000-061	6011000-051	6011000-051	6011000-051	6011000-041	6011000-031	6011000-021	6011000-011	6011000-000		ALIGNMENT OPTICAL TELESCOPE (LEM)	1	65	9
6899980-021	6899980-021	6899980-021	6899980-021	6899980-021	6899980-021	6899980-031	6899980-011	6899980-011	6899980-01	6899950-011	6899950-011	NAVIGATION BASE ASSEMBLY LEM	1	64	8
						6007010-011	6007010-011	6007010-011	6007010-011			SIGNAL CONDITIONER ASSY LEM FLIGHT-QUAL	1	30	7
6014515-051	6014515-051	6014515-051	6014515-051	6014515-021	6014515-021	6014515-021	6014515-011	6014515-011	6014515-011	6014515-011		G & N INTERCONNECT HARNESS GROUP (LEM)	1	56	6
6014512-061	6014512-061	6014512-041	6014512-041	6014512-021	6014512-021	6014512-011	6014512-011	6014512-011	6014512-011	6014512-011		COMPUTER CONTROL & RETICLE DIMMER ASSEMBLY	1	50	5
6007200-071	6007200-071	6007200-051	6007200-051	6007200-051	6007200-051	6007200-041	6007200-021	6007200-021	6007200-031	6007200-011		POWER & SERVO ASSEMBLY	1	45	4
2007222-221 OR 2007222-241	2007222-221 OR 2007222-241	2007222-131	2007222-131	2007222-131	2007222-081	2007222-081	2007222-061	2007222-061	2007222-041	2007222-041		COUPLING DATA UNIT	1	40	3
6007001-121	6007001-101	6007001-071	6007001-081	6007001-071	6007001-061	6007001-061	6007001-021	6007001-021	6007001-011	6007001-011		INERTIAL MEAS. UNIT & PULSE TORQUE ASSEMBLY	1	35	2
							6003001-021	6003001-021	6003001-021			APOLLO GUIDANCE COMPUTER GROUP	1	05	1
-111	-101	-091	-081	-071	-061	-051	-041	-031	-021	-011	EFFECTIVITY UNDEFINED G & N EFFECTIVITY	SUB-SYSTEM	QTY	EQUIP CODE	FIND NO.
611	610	609	608	607	606	605	604	603	602	601					

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE 3 PLACE DECIMALS DECIMALS ANGLES + - + - + - - - - -		MIL INSTRUMENTATION LAB CONTRACT NO. DATE DRAWN GRD DATE CHECKED AJC APPROVAL WSW		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DO NOT SCALE THIS DRAWING		CONTRACT		G & N SPACECRAFT EQUIPMENT LEM	
MATERIAL		NASA APPROVAL		SIZE CODE IDENT NO D 80230	
NEXT ASSY USED ON		MIL APPROVAL WK		SCALE NONE	
APPLICATION		APPROVAL		SHEET 1 OF 2	

REVISONS						
ZONE	UTR	DESCRIPTION	CHG. REC.	DATE	EMG	APPR.
	CA	REPLACES REV BZ WITH CHANGE PER TDN 36833		10 SEP 68		
IN	CB	REVISED PER TDOR 36836		22 SEP 68		
IN	CC	REVISION STATUS CHANGED		30 SEP 68		
	CD	REVISION STATUS CHANGED		5 DEC 68		

					6004000-051	6004000-051	6004000-051	6004000-051	6004000-051	6004000-051		INSTALLATION KIT, COMPUTER GROUP-LEM	1	05	19	
					6004000-041	6004000-041	6004000-041	6004000-041	6004000-041	6004000-041		INSTALLATION KIT, COMPUTER GROUP-LEM	1	05	18	
											6011856	AGT HIGH DENSITY FILTER ASSY	15	65	17	
					2003994-021	2003994-021	2003994-021	2003994-021	2003994-011	2003994-011		UNIVERSAL DSKY	1	05	16	
					6007013-021	6007013-021	6007013-021	6007013-021	6007013-021	6007013-021	6007013-021	SIGNAL CONDITIONER ASSY LEM OPERATIONAL	1	30	15	
					6007020	6007020	6007020	6007020	6007020	6007020	6007020	INSTALLATION KIT SIGNAL CONDITIONER ASSY	1	30	14	
												TO PSA LEM OPERATIONAL				
												INSTALLATION KIT SIGNAL CONDITIONER ASSY	1	30	13	
												TO PSA LEM FLIGHT-QUAL				
												INSTALLATION KIT COMPUTER GROUP LEM	1	05	12	
												AGC DSKY ASSEMBLY	1	05	11	
					2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031	2003993-041 OR 2003993-031		COMPUTER ASSEMBLY	1	05	10	
					6011000-091	6011000-081	6011000-081	6011000-081	6011000-081	6011000-081	6011000-071	ALIGNMENT OPTICAL TELESCOPE (LEM)	1	65	9	
					6899980-021	6899980-021	6899980-021	6899980-021	6899980-021	6899980-021	6899980-021	NAVIGATION BASE ASSEMBLY LEM	1	64	8	
												SIGNAL CONDITIONER ASSY LEM FLIGHT-QUAL	1	30	7	
					6014515-051	6014515-051	6014515-051	6014515-051	6014515-051	6014515-051	6014515-051	G & N INTERCONNECT HARNESS GROUP (LEM)	1	56	6	
					6014512-081	6014512-081	6014512-081	6014512-081	6014512-081	6014512-081	6014512-081	COMPUTER CONTROL & RETICLE DIMMER ASSEMBLY	1	50	5	
					6007200-071	6007200-071	6007200-071	6007200-071	6007200-071	6007200-071	6007200-071	POWER & SERVO ASSEMBLY	1	45	4	
					2007222-221 OR 2007222-241	2007222-221 OR 2007222-241	2007222-221 OR 2007222-241	2007222-221 OR 2007222-241	2007222-221 OR 2007222-241	2007222-221 OR 2007222-241	2007222-221 OR 2007222-241	COUPLING DATA UNIT	1	40	3	
					6007001-121	6007001-121	6007001-121	6007001-121	6007001-121	6007001-121	6007001-121	INERTIAL MEAS. UNIT & PULSE TORQUE ASSEMBLY	1	35	2	
												APOLLO GUIDANCE COMPUTER GROUP	1	05	1	
					-181	-171	-161	-151	-141	-131	-121	EFFECTIVITY UNDEFINED G & N EFFECTIVITY	SUB-SYSTEM	QTY	EQUIP CODE	FINI NO.
					612	617	616	615	614	613	612					

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON 2 PLACE 3 PLACE DECIMALS DECIMALS ANGLES + + + - - -	INSTRUMENTATION LAB CHANDLER ROAD BAY 10 CONTRACT		MAN'D SPACECRAFT CENTER HOUSTON, TEXAS	
	DRAWN <u>CRD</u> DATE <u>2/1/68</u> CHECKED <u>AJC</u> APPROVAL <u>WSJ</u>		G & N SPACECRAFT EQUIPMENT LEM	
	DO NOT SCALE THIS DRAWING MATERIAL		SIZE CODE IDENT NO D 80230	
	NASAP APPROVAL M1 APPROVAL <u>WK</u>		6015000 SCALE <u>NONE 1</u> SHEET <u>2 OF 2</u>	
NO. 1000000 NEXT ASSY USED ON APPLICATION				

QUANTITY REQUIRED		ITEM NO.	PART OR IDENTIFYING NUMBER	MATERIALS OR DESCRIPTION	COST IDENTIFICATION
				LIN OF PARTS AND MATERIALS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON:		DRAWN BY <u>G. Guffe</u> DATE <u>06-07-68</u> CHECKED BY <u>J. M. Smith</u> DATE <u>06-07-68</u> <u>APPROVED: [Signature]</u> CONTRACT		ISSUED BY <u>SPACESHIP CENTER</u> JULY 1968	
3 PLACE ± .005 DECIMALS FRACTIONS ANGLES ± ° ±'		ORIGIN <u>Spacelab</u>		SPACESHIP INSTALLATION LIST	
DO NOT SCALE THIS DRAWING				APOLLO GUIDANCE EQUIPMENT	
MATERIAL _____				LEM (UW12234)	
NO. 00000000	USED ON _____	NASA APPROVAL _____	SIZE J2	CODE IDENT NO. 80230	6014999
APPLICATION _____	APPROVAL _____	REP. APPROVAL _____	SCALE _____	SHEET # OF 2	